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<110> Bhatia, Ajay  
Skeiky, Yasir A.W.  
Probst, Peter  
  
<120> COMPOSITIONS AND METHODS FOR TREATMENT AND  
DIAGNOSIS OF CHLAMYDIAL INFECTION  
  
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<213> Chlamydia trachomatis

<400> 4

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ctgcagagtt	gactgaggaa	gaggttggtc	gactaaacgc	tcttttacag	tcggattacg	240
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atgcttatcg	tgacaaaaga	catagacttt	ctttgcctgt	tcgtggtcag	agaacaaaaa	360
caaattctcg	cacgcgtaag	ggtaaacgta	aaactattgc	aggtaagaag	aaataataat	420
ttttaggaga	gagtgttttg	gttaaaaatc	aagcgcaaaa	aagaggcgta	aaaagaaaac	480
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<210> 5

<211> 86

<212> PRT

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<400> 5

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			20				25						30		
Ile	Ile	Lys	Lys	Met	Trp	Asp	Tyr	Ile	Lys	Glu	Asn	Ser	Leu	Gln	Asp
		35				40						45			
Pro	Thr	Asn	Lys	Arg	Asn	Ile	Asn	Pro	Asp	Asp	Lys	Leu	Ala	Lys	Val
	50				55						60				
Phe	Gly	Thr	Glu	Lys	Pro	Ile	Asp	Met	Phe	Gln	Met	Thr	Lys	Met	Val
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<210> 6

<211> 61

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<213> Chlamydia trachomatis

<400> 6

Ile	Val	Gly	Ala	Gly	Pro	Met	Pro	Arg	Thr	Glu	Ile	Ile	Lys	Lys	Met
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Trp	Asp	Tyr	Ile	Lys	Glu	Asn	Ser	Leu	Gln	Asp	Pro	Thr	Asn	Lys	Arg
			20					25					30		
Asn	Ile	Asn	Pro	Asp	Asp	Lys	Leu	Ala	Lys	Val	Phe	Gly	Thr	Glu	Lys
		35				40						45			
Pro	Ile	Asp	Met	Phe	Gln	Met	Thr	Lys	Met	Val	Ser	Gln			
50					55						60				

<210> 7

<211> 36

<212> PRT

<213> Chlamydia trachomatis

<400> 7

Ala	Ala	Thr	Ser	Cys	Glu	Leu	Ala	Asn	Gln	His	Gly	His	Leu	Gln	Phe
1				5					10					15	

Pro Leu Leu Thr Arg Ser Leu Glu Leu Met Leu Leu Pro Ser Gln Ser
 20 25 30
 Gln Ser His Arg
 35

<210> 8
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 <213> Chlamydia trachomatis

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 1 5 10 15
 Pro Phe

<210> 9
 <211> 5
 <212> PRT
 <213> Chlamydia trachomatis

<400> 9
 Leu Ala Leu Trp Asn
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<210> 10
 <211> 11
 <212> PRT
 <213> Chlamydia trachomatis

<400> 10
 Cys Cys Tyr Arg Val Asn His Asn His Ile Asp
 1 5 10

<210> 11
 <211> 36
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 <213> Chlamydia trachomatis

<400> 11
 Val Asp Val Ile Val Ile Asp Ser Val Ala Ala Leu Val Pro Lys Ser
 1 5 10 15
 Glu Leu Glu Gly Glu Ile Gly Asp Val His Val Gly Leu Gln Ala Arg
 20 25 30
 Met Met Ser Gln
 35

<210> 12
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 <213> Chlamydia trachomatis

<400> 12
 Met Pro Arg Ile Ile Gly Ile Asp Ile Pro Ala Lys Lys Lys Leu Lys
 1 5 10 15
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 20 25 30

Ile Ile Ala Arg Leu Gln Leu Asn Pro Glu Ala Arg Ala Ala Glu Leu
 35 40 45
 Thr Glu Glu Glu Val Gly Arg Leu Asn Ala Leu Leu Gln Ser Asp Tyr
 50 55 60
 Val Val Glu Gly Asp Leu Arg Arg Arg Val Gln Ser Asp Ile Lys Arg
 65 70 75 80
 Leu Ile Thr Ile His Ala Tyr Arg Gly Gln Arg His Arg Leu Ser Leu
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 Pro Val Arg Gly Gln Arg Thr Lys Thr Asn Ser Arg Thr Arg Lys Gly
 100 105 110
 Lys Arg Lys Thr Ile Ala Gly Lys Lys Lys
 115 120

<210> 13
 <211> 20
 <212> PRT
 <213> Chlamydia trachomatis

<400> 13
 Asp Pro Thr Asn Lys Arg Asn Ile Asn Pro Asp Asp Lys Leu Ala Lys
 1 5 10 15
 Val Phe Gly Thr
 20

<210> 14
 <211> 20
 <212> PRT
 <213> Chlamydia trachomatis

<400> 14
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 <212> DNA
 <213> Chlamydia trachomatis

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 <212> DNA
 <213> Chlamydia trachomatis

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 attaaaggtt ccaagtctgc tgccgaattg accgcaaata ttttggaaca agctggaggc 180
 gcgggctctt ccgcacacat tacagcttcc caagtgtcca aaggattagg ggatgcgaga 240
 actgttgtcg ctttagggaa tgcttttaac ggagcggtgc caggaacagt tcaaagtgcg 300
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<213> Chlamydia trachomatis
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<210> 18
<211> 18
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<212> PRT

<213> Chlamydia trachomatis

<400> 18

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 1 5 10 15
 Tyr Leu

<210> 19

<211> 18

<212> PRT

<213> Chlamydia trachomatis

<400> 19

Cys Ser Phe Ile Gly Gly Ile Thr Tyr Leu Ala Thr Phe Gly Ala Ile
 1 5 10 15
 Arg Pro

<210> 20

<211> 216

<212> PRT

<213> Chlamydia trachomatis

<400> 20

Met Arg Gly Ser Gln Gln Ile Phe Val Cys Leu Ile Ser Ala Glu Arg
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 20 25 30
 Ser Glu Leu Ser Val Arg Phe Cys Leu Ser Thr Lys Cys Trp Gln Asn
 35 40 45
 Arg Phe Phe Leu Pro Lys Leu Lys Gln Ile Trp Asp Leu Leu Leu Ala
 50 55 60
 Ile Leu Trp Arg Leu Thr Met Gln Arg Leu Trp Trp Val Leu Asp Ser
 65 70 75 80
 Leu Ser Val Arg Lys Glu Gln Ile Ala Lys Pro Ala Ala Leu Val Leu
 85 90 95
 Arg Glu Lys Ser Arg Tyr Ser Lys Cys Arg Glu Arg Lys Met Leu Ala
 100 105 110
 Arg Arg Lys Ser Leu Glu Arg Lys Pro Arg Arg Ser Arg Ala Ser Ser
 115 120 125
 Met His Ser Ser Leu Cys Ser Arg Ser Phe Trp Asn Ala Leu Pro Thr
 130 135 140
 Phe Ser Asn Trp Cys Arg Cys Leu Leu Gln Trp Val Phe Val Arg Leu
 145 150 155 160
 Trp Leu Leu Asp Val Arg Ser Leu Leu Gln Leu Leu Asp Cys Ala Leu
 165 170 175
 Ser Ala Pro Glu His Lys Gly Phe Phe Lys Phe Leu Lys Lys Lys Ala
 180 185 190
 Val Ser Lys Lys Lys Gln Pro Phe Leu Ser Thr Lys Cys Leu Ala Phe
 195 200 205
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<210> 21

<211> 1256

<212> DNA

<213> Chlamydia trachomatis

<400> 21

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caagctctca	aatccttgct	ttgaataatc	cagatatttc	aaaaaccatg	ttcgataaat	180
tcacccgaca	aggactccgt	ttcgtactag	aagcctctgt	atcaaataat	gaggatatag	240
gagatcgcg	tcggttaact	atcaatggga	atgtcgaaga	atacgattac	gttctcgtat	300
ctataggacg	ccgtttgaat	acagaaaata	ttggcttgga	taaagctggg	gttattttgtg	360
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ctattggaga	tatcacagga	aaatggcaac	ttgcccatgt	agcttctcat	caaggaatca	480
ttgcagcacg	gaatataggt	ggccataaag	aggaaatcga	ttactctgct	gtcccttctg	540
tgatctttac	cttccctgaa	gtcgcttcag	taggcctctc	cccaacagca	gctcaacaac	600
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cttgcgagga	ggaggcgctc	tggaagacca	ggtgaattta	gctaagtttt	ctgagcgttt	720
tgattctttg	cgagaattat	ccgctaagct	tggttacgat	agcgatggag	agactgggga	780
tttcttcaac	gaggagtacg	acgacgaaga	agaggaaatc	aaaccgaaga	aaactacgaa	840
acgtggacgt	aagaagagcc	gttcataagc	cttgctttta	aggtttggta	gttttacttc	900
tctaaaatcc	aaatggttgc	tgtgccaaaa	agtagtttgc	gtttccggat	agggcgtaaa	960
tgcgctgcat	gaaagattgc	ttcgagagcg	gcacgcgctg	ggagatcccg	gatactttct	1020
ttcagatacg	aataagcata	gctgttccca	gaataaaaaac	ggccgacgct	aggaacaaca	1080
agatttagat	agagcttggt	tagcaggtaa	actgggttat	atgttgctgg	gcgtgttagt	1140
tctagaatac	ccaagtgtcc	tccaggttgt	aatactcgat	acacttccct	aagagcctct	1200
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<210> 22

<211> 601

<212> DNA

<213> Chlamydia trachomatis

<400> 22

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caagctctca	aatccttgct	ttgaataatc	cagatatttc	aaaaaccatg	ttcgataaat	180
tcacccgaca	aggactccgt	ttcgtactag	aagcctctgt	atcaaataat	gaggatatag	240
gagatcgcg	tcggttaact	atcaatggga	atgtcgaaga	atacgattac	gttctcgtat	300
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ctattggaga	tatcacagga	aaatggcaac	ttgcccatgt	agcttctcat	caaggaatca	480
ttgcagcacg	gaatataggt	ggccataaag	aggaaatcga	ttactctgct	gtcccttctg	540
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<210> 23

<211> 270

<212> DNA

<213> Chlamydia trachomatis

<400> 23

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tttgattctt	tgcgagaatt	atccgcctaag	cttggttacg	atagcgatgg	agagactggg	180
gatttcttca	acgaggagta	cgacgacgaa	gaagaggaaa	tcaaaccgaa	gaaaactacg	240
aaacgtggac	gtaagaagag	ccgttcataa				270

<210> 24

<211> 363
 <212> DNA
 <213> Chlamydia trachomatis

<400> 24
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 actttctttc agatacgaat aagcatagct gttcccagaa taaaaacggc cgacgctagg 180
 aacaacaaga tttagataga gcttgtgtag caggtaaact gggttatatg ttgctgggcg 240
 tgttagttct agaataccca agtgcctcc aggttgtaat actcgatata cttccctaag 300
 agcctctaag ggataggata agttccgtaa tccataggcc atagaagcta aacgaaacgt 360
 att 363

<210> 25
 <211> 696
 <212> DNA
 <213> Chlamydia trachomatis

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 gcaagctctc aaatccttgc tttgaataat ccagatattt caaaaacccat gttcgataaa 180
 ttcacccgac aaggactccg tttcgacta gaagcctctg tatcaaataat tgaggatata 240
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 tctataggac gccgtttgaa tacagaaaat attggcttgg ataaagctgg tgttatttgt 360
 gatgaacgcg gagtcatccc taccgatgcc acaatgogca caaacgtacc taacatttat 420
 gctattggag atatcacagg aaaatggcaa cttgcccattg tagcttctca tcaaggaatc 480
 attgcagcac ggaatatagg tggccataaa gaggaaatcg attactctgc tgtcccttct 540
 gtgatcttta cttccctga agtcgcttca gtaggcctct ccccaacagc agctcaacaa 600
 catctccttc ttcgcttact tttctgaaa aatttgatac agaagaagaa ttcctcgcac 660
 acttgcgagg aggagggcgt ctggaagacc agttga 696

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 <211> 231
 <212> PRT
 <213> Chlamydia trachomatis

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 20 25 30
 Gly Ser Glu Val Ser Val Ile Glu Ala Ser Ser Gln Ile Leu Ala Leu
 35 40 45
 Asn Asn Pro Asp Ile Ser Lys Thr Met Phe Asp Lys Phe Thr Arg Gln
 50 55 60
 Gly Leu Arg Phe Val Leu Glu Ala Ser Val Ser Asn Ile Glu Asp Ile
 65 70 75 80
 Gly Asp Arg Val Arg Leu Thr Ile Asn Gly Asn Val Glu Glu Tyr Asp
 85 90 95
 Tyr Val Leu Val Ser Ile Gly Arg Arg Leu Asn Thr Glu Asn Ile Gly
 100 105 110
 Leu Asp Lys Ala Gly Val Ile Cys Asp Glu Arg Gly Val Ile Pro Thr
 115 120 125
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 130 135 140
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<211> 264
<212> DNA
<213> Chlamydia pneumoniae
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<210> 28
<211> 87
<212> PRT
<213> Chlamydia pneumoniae
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<210> 29
<211> 369
<212> DNA
<213> Chlamydia pneumoniae
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cctgaggcaa	gagcctctga	attaactgaa	gaagaagtag	gacgactgaa	ctctctgcta	180
caatcagaat	ataccgtaga	aggggatttg	cgacgtcgtg	ttcaatcgga	tatcaaaaga	240
ttgatcgcca	tccattctta	tcgagggtcag	agacatagac	tttctttacc	agtaagagga	300
caacgtataa	aaactaattc	tcg tactcga	aaaggtaaaa	gaaaaacagt	cgcaggtaag	360
aagaataataa						369

60

ttacctacct cgcgacattc ggagctatcc gtccgattct gtttgtcaac aaaatgctgg 120
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<210> 34
 <211> 53
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 <213> Chlamydia trachomatis

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 Ile Gly Gly Ile Thr Tyr Leu Ala Thr Phe Gly Ala Ile Arg Pro Ile
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 Leu Phe Val Asn Lys Met Leu Ala Lys Pro Phe Leu Ser Ser Gln Thr
 35 40 45
 Lys Ala Asn Met Gly
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<210> 35
 <211> 55
 <212> DNA
 <213> Chlamydia pneumoniae

<400> 35
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<210> 36
 <211> 33
 <212> DNA
 <213> Chlamydia pneumoniae

<400> 36
 ctcgaggaat tcttatttta caatatgttt gga 33

<210> 37
 <211> 53
 <212> DNA
 <213> Chlamydia pneumoniae

<400> 37
 gatatacata tgcatacaca tcaccatcac atgccacgca tcattggaat gat 53

<210> 38
 <211> 30
 <212> DNA
 <213> Chlamydia pneumoniae

<400> 38
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<210> 39
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 <212> PRT
 <213> Artificial Sequence

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<223> Made in the lab

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<211> 16

<212> PRT

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<220>

<223> made in the lab

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<210> 41

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> made in the lab

<400> 41

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1				5					10					15

<210> 42

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> made in the lab

<400> 42

Lys	Lys	Ile	Ile	Ile	Pro	Asp	Ser	Lys	Leu	Gln	Gly	Val	Ile	Gly	Ala
1				5					10					15	

<210> 43

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> made in the lab

<400> 43

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1				5					10					15

<210> 44

<211> 509

<212> DNA

<213> Chlamydia

<220>

<221> unsure

<222> (522)

<223> n=A,T,C or G

<400> 47

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gatagtacag tccaagatat tttagacaaa atcacaacag acccttctct aggtttgttg 180
aaagctttta acaactttcc aatcactaat aaaattcaat gcaacgggtt attcactccc 240
aggaacattg aaactttatt aggaggaact gaaataggaa aattcacagt cacacccaaa 300
agctctggga gcatgttctt agtctcagca gatattattg catcaagaat ggaaggcggc 360
gttggttctag ctttgggtacg agaagggtgat tctaagccct acgcgattag ttatggatac 420
tcatcaggcg ttcctaattt atgtagtcta agaaccagaa ttattaatac aggattgact 480
ccgacaacgt attcattacg tgtaggcggt ttagaaagcg gngtggtatg ggtaaatgcc 540
ctttctaatt gcaatgatat tttaggaata acaaatcttc taatgtatct tttttggagg 600

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<210> 48

<211> 600

<212> DNA

<213> Chlamydia

<400> 48

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cgtttgatgt gtatactatg tcgtgtaagc ctttttggtt acttctgaca ctagccccc 180
atccagaaga taaattggat tgccgggtcta ggtagcgaag taacactttt tccctaataa 240
attgggccaa gttgcatccc acgttttagag aaagtgttgt ttttccagtt cctcccttaa 300
aagagcaaaa aactaagggtg tgcaaatcaa ctccaacggt agagtaagtt atctattcag 360
ccttggaata catgtctttt cttagacaaga taagcataat caaagccttt ttagcttta 420
aactgttatc ctctaatttt tcaagaacag gagagtctgg gaataatcct aaagagtttt 480
ctatttggtg aagcagtcct agaattagtg agacactttt atggttagagt tctaaggagg 540
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<210> 49

<211> 600

<212> DNA

<213> Chlamydia

<400> 49

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gatagtacag tccaagatat tttagacaaa atcacaacag acccttctct aggtttgttg 180
aaagctttta acaactttcc aatcactaat aaaattcaat gcaacgggtt attcactccc 240
aggaacattg aaactttatt aggaggaact gaaataggaa aattcacagt cacacccaaa 300
agctctggga gcatgttctt agtctcagca gatattattg catcaagaat ggaaggcggc 360
gttggttctag ctttgggtacg agaagggtgat tctaagccct acgcgattag ttatggatac 420
tcatcaggcg ttcctaattt atgtagtcta agaaccagaa ttattaatac aggattgact 480
ccgacaacgt attcattacg tgtaggcggt ttagaaagcg gtgtggtatg ggtaaatgcc 540
ctttctaatt gcaatgatat tttaggaata acaataactt ctaatgtatc tttttggagg 600

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<210> 50

<211> 406

<212> DNA

<213> Chlamydia

<400> 50

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gatccgaatt cggcaccgagt tcttagcttg cttaattacg taattaacca aactaaaggg 60
gctatcaaat agcttattca gtctttcatt agttaaacga tcttttctag ccatgactca 120
tcctatgttc ttcagctata aaaatacttc ttaaaacttg atatgctgta atcaaatcat 180
cattaaccac aacataatca aattcgctag cggcagcaat ttcgacagcg ctatgctcta 240
atctttcttt cttctggaaa tctttctctg aatcccagagc attcaaacgg cgctcaagtt 300
cttcttgaga gggagcttga ataaaaatgt gactgccggc atttgcttct tcagagccaa 360
agctccttgt acatcaatca cggctatgca gtctcgtgcc gaattc 406

```

<210> 51

<211> 602

<212> DNA

<213> Chlamydia

<400> 51

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gatccgaatt cggcaccgaga tatttttagac aaaatcacia cagacccttc tctagggttg 60
ttgaaagctt ttaacaactt tccaatcact aataaaattc aatgcaacgg gttattcact 120
cccaggaaca ttgaaacttt attaggagga actgaaatag gaaaattcac agtcacaccc 180
aaaagctctg ggagcatgtt cttagtctca gcagatatta ttgcatcaag aatggaaggc 240
ggcgttggtc tagcttttgt acgagaaggt gattctaagc cctacgcgat tagttatgga 300
tactcatcag gcgttcctaa tttatgtagt ctaagaacca gaattattaa tacaggattg 360
actccgacaa cgtattcatt acgtgtaggc ggttttagaaa gcggtgtggt atgggttaat 420
gccctttcta atggcaatga tatttttagga ataacaaata cttctaattgt atcttttttg 480
gaggtaatac ctcaaacaaa cgcttaaaca atttttattg gatttttctt ataggtttta 540
tatttagaga aaaaagttcg aattacgggg tttgttatgc aaaataaact cgtgccgaat 600
tc 602

```

<210> 52

<211> 145

<212> DNA

<213> Chlamydia

<400> 52

```

gatccgaatt cggcaccgagc tcgtgccgat gtgttcaaca gcatccatag gatgggcagt 60
caaataact ccaagtaatt ctttttctct tttcaacaac tccttaggag agcgttggat 120
aacattttca gctcgtgccg aattc 145

```

<210> 53

<211> 450

<212> DNA

<213> Chlamydia

<400> 53

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gatccgaatt cggcaccgagg taatcggcac cgcactgctg aactcatct cctcgagctc 60
gatcaaacc acacttgga caagtaccta caacataacg gtcogctaaa aacttccctt 120
cttctcaga atacagctgt tcggtcacct gattctctac cagtcgcgct tcctgcaagt 180
ttogatagaa atcttgaca atagcaggat gataagcgtt cgtagtcttg gaaaagaaat 240
ctacagaaat tcccaatttc ttgaaggat ctttatgaag cttatgatac atgtcgacat 300
attcttgata ccccatgcct gccaaactct cattaagggt aattgcgatt ccgtattcat 360
cagaaccaca aatatacaaa acctctttgc cttgtagtct ctgaaaacgc gcataaacat 420
ctgcaggcaa ataagcctcg tgccgaattc 450

```

<210> 54

<211> 716

<212> DNA

<213> Chlamydia

<400> 54

```

gatcgaaatt cggcacgagc ggcacgagtt ttctgatagc gatttacaat cctttattca 60
acttttgcct agagaggcac actatactaa gaagtttctt ggggtgtgtg cacagtcctg 120
tcgtcagggg attctgctag aggggtaggg gaaaaaacc cttattactat gaccatgcgc 180
atgtggaatt acattccata gactttcgca tcattcccaa catttacaca gctctacacc 240
tcttaagaag aggtgacgtg gattgggtgg ggcagccttg gcaccaaggg attccttttg 300
agcttcggac tacctctgct ctctacaccc attaccctgt agatggcaca ttctggctta 360
ttcttaatcc caaagatcct gtaactttcct ctctatctaa tcgtcagcga ttgattgctg 420
ccatccaaaa ggaaaaactg gtgaagcaag ctttaggaac acaatatcga gtagctgaaa 480
gctctccatc tccagaggga atcatagctc atcaagaagc ttctactcct tttcctggga 540
aaattacttt gatatatccc aataatatta cgcgctgtca gcgtttggcc gaggtatcca 600
aaaaatgacg gacaaggagc acgctaaatt tgtacatacc ccaaaatcaa tcagccatct 660
aggcaaatgg aatatcaaag taaacagtat acaactgggg atctcgtgcc gaattc 716

```

<210> 55

<211> 463

<212> DNA

<213> Chlamydia trachomatis

<400> 55

```

tctcaaatcc ttgctttgaa taatccagat atttcaaaaa ccatgttcga taaattcacc 60
cgacaaggac tccgtttcgt actagaagcc tctgtatcaa atattgagga tataggagat 120
cgcgttcggg taactatcaa tgggaatgtc gaagaatacg attacgttct cgtatctata 180
ggacgcggtt tgaatacaga aaatattggc ttggataaag ctgggtgttat ttgtgatgaa 240
cgcgaggatc tccctaccga tgccacaatg cgcacaaacg tacctaacat ttatgctatt 300
ggagatatca caggaaaatg gcaacttgcc catgtagctt ctcatacagg aatcattgca 360
gcacgggaata taggtggcca taaagaggaa atcgattact ctgctgtccc ttctgtgatc 420
tttaccttcc ctgaagtcgc ttcagtaggc ctctccccaa cag 463

```

<210> 56

<211> 829

<212> DNA

<213> Chlamydia trachomatis

<400> 56

```

gtactatggg atcattagtt ggaagacagg ctccggattt ttctggtaaa gccgtttgtt 60
gtggagaaga gaaagaaatc tctctagcag actttcgtgg taagtatgta gtgctcttct 120
tttatcctaa agattttacc tatgtttgtc ctacagaatt acatgctttt caagatagat 180
tggtagattt tgaagagcat ggtgcagtcg tccttggttg ctccgttgac gacattgaga 240
cacattctcg ttggctcact gtagcgagag atgcaggagg gatagaggga acagaatatc 300
ctctgttagc agaccctct tttaaaatat cagaagcttt tgggtgtttg aatcctgaag 360
gatcgctcgc ttttaagagct actttcctta tcgataaaca tgggggttatt cgtcatgcgg 420
ttatcaatga tcttccttta gggcgttcca ttgacgagga attgcgtatt ttagattcat 480
tgatcttctt tgagaaccac ggaatggttt gtccagctaa ctggcgcttct ggagagcgtg 540
gaatgggtgcc ttctgaagag ggattaaaag aatacttcca gacgatggat taagcatctt 600
tgaaagtaag aaagtcgtac agatcttgat ctgaaaagag aagaaggctt ttttaatttc 660
tgcagagagc cagcgaggct tcaataatgt tgaagtctcc gacaccaggc aatgctaagg 720
cgacgatatt agttagttaa gtctgagtat taaggaaatg aaggccaaag aaatagctat 780
caataaagaa gccttcttcc ttgactctaa agaatagtat gtcgtatcc 829

```

<210> 57

<211> 1537

<212> DNA

<213> Chlamydia trachomatis

<400> 57

acatcaagaa atagcggact cgcctttagt gaaaaaagct gaggagcaga ttaatcaagc 60
 acaacaagat attcaaacga tcacacctag tgggtttgat attcctatcg ttgggtccgag 120
 tgggtcagct gcttccgcag gaagtgcggc aggagcgttg aaatcctcta acaattcagc 180
 aagaatttcc ttgttgcttg atgatgtaga caatgaaatg gcagcgattg caatgcaagg 240
 ttttcgatct atgatcgaac aatttaattgt aaacaatcct gcaacagcta aagagctaca 300
 agctatggag gctcagctga ctgcgatgtc agatcaactg gttggtgcgg atggcgagct 360
 cccagccgaa atacaagcaa tcaaagatgc tcttgcgcaa gctttgaaac aaccatcagc 420
 agatggttta gctacagcta tgggacaagt ggctttttgca gctgccaaagg ttggaggagg 480
 ctccgcagga acagctggca ctgtccagat gaatgtaaaa cagctttaca agacagcgtt 540
 ttcttcgact tcttccagct cttatgcagc agcactttcc gatggatatt ctgcttaca 600
 aacactgaac tctttatatt ccgaaagcag aagcggcgtg cagtcagcta ttagtcaaac 660
 tgcaaattccc gcgctttcca gaagcgtttc tcgttctggc atagaaagtc aaggacgcag 720
 tgcatatagc cgcttacagg cagcagaaac tattgtcaga gatagccaaa cgttaggatga 780
 agcaaatcaa gaagagatta tgcagaagct caccgcatct attagcaaag ctccacaatt 840
 tgggtatcct gctgttcaga attctgtgga tagcttgcag aagtttgctg cacaattgga 960
 aagagagttt gttgatgggg aacgtagtct cgcagaatct caagagaatg cgttttagaa 1020
 acagcccgtt ttcatccaac aggtgttggg aaacattgct tctctattct ctggttatct 1080
 ttcttaacgt gtgattgaag tttgtgaatt gagggggagc caaaaaagaa tttctttttt 1140
 ggctcttttt tcttttcaaa ggaatctcgt gtctacagaa gtcttttcaa taataagttc 1200
 ttagttccaa aagaagaaaa tatataaaaag aaaaaactcc taattcattt aaaaagtgtc 1260
 cggcagactt cgtggaaaaat gtctgtaaag ctggaggggga atcagcagaa agatgcaaga 1320
 tatccgagaa aaaaggctca ggctcgtgcc gaattcggca cgagactacg aaagaaagg 1380
 cttttctttc ggaatctgtc attggatctg cgtaagactt aaagttcggc aacacaggct 1440
 ctgtcttttc ttttaggtttc ttgcgcgaga aaaattttct caagtaacaa gaagattttc 1500
 ttttacagcc ggcattccggc ttctcgcgaa gtataac 1537

<210> 58
 <211> 463
 <212> DNA
 <213> Chlamydia trachomatis

<400> 58
 tctcaaatcc ttgctttgaa taatccagat atttcaaaaa ccatgttcga taaattcacc 60
 cgacaaggac tccgtttcgt actagaagcc tctgtatcaa atattgagga tataggagat 120
 cgcgttcggt taactatcaa tgggaatgtc gaagaatacg attacgttct cgtatctata 180
 ggacgcggtt tgaatacaga aaatattggc ttggataaag ctggtgttat ttgtgatgaa 240
 cgcggagtca tccctaccga tgccacaatg cgcacaaacg tacctaacat ttatgctatt 300
 ggagatataca caggaaaaat gcaacttgcc catgtagctt ctcatcaagg aatcattgca 360
 gcacggaata taggtggcca taaagaggaa atcgattact ctgctgtccc ttctgtgatc 420
 tttaccttcc ctgaagtcgc ttcagtaggc ctctcccca cag 463

<210> 59
 <211> 552
 <212> DNA
 <213> Chlamydia trachomatis

<400> 59
 acattcctcc tgctcctcgc ggccatccac aaattgaggt aaccttcgat attgatgcc 60
 acggaatttt acacgtttct gctaaagatg ctgctagtgg acggaacaa aaaatccgta 120
 ttgaagcaag ctctggatta aaagaagatg aaattcaaca aatgatccgc gatgcagagc 180
 ttcataaaga ggaagacaaa caacgaaaag aagcttctga tgtgaaaaat gaagccgatg 240
 gaatgatctt tagagccgaa aaagctgtga aagattacca cgacaaaatt cctgcagaac 300
 ttgttaaaga aattgaagag catattgaga aagtaacgca agcaatcaaa gaagatgctt 360
 ccacaacagc tatcaaagca gcttctgatg agttgagtag togtatgcaa aaaatcggag 420
 aagctatgca ggctcaatcc gcatccgcag cagcatcttc tgcagcgaat gctcaaggag 480
 ggccaaacat taactccgaa gatctgaaaa aacatagttt cagcacacga cctccagcag 540

gaggaagcgc ct

552

<210> 60
 <211> 1180
 <212> DNA
 <213> Chlamydia trachomatis

<400> 60

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atcctagcgg taaaactgct tactggtcag ataaaatcca tacagaagca acacgtactt 60
cttttaggag aaaaaatcta taatgctaga aaaatcctga gtaaggatca cttctcctca 120
acaacttttt catcttgat agagttagtt tttagaacta agtcttctgc ttacaatgct 180
cttgcatatt acgagctttt tataaacctc cccaacccaa ctctacaaaa agagtttcaa 240
tcgatccctt ataaatccgc atatatatttg gccgctagaa aaggcgattt aaaaaccaag 300
gtcgatgtga tagggaaagt atgtggaatc tcgtgccgaa ttcggcacga gcggcacgag 360
gatgtagagt aattagttaa agagctgcat aattatgaca aagcatggaa aacgcattcg 420
tggtatccaa gagacttacg atttagctaa gtgcgtattct ttgggtgaag cgatagatat 480
tttaaaacag tgcctactg tgcgtttcga tcaaacgggt gatgtgtctg ttaaattagg 540
gatcgatcca agaaagagt atcagcaa atcgtgggtcg gtttctttac ctcacggtac 600
aggtaaagt ttgcgaattt tagtttttgc tgctggagat aaggctgcag aggctattga 660
agcaggagcg gactttgttg gtagcgacga cttggtagaa aaaatcaaag gtggatgggt 720
tgacttcgat gttgcggttg ccaactcccga tatgatgaga gaggtcggaa agctaggaaa 780
agtttttagt ccaagaaacc ttatgcctac gcctaaagcc ggaactgtaa caacagatgt 840
ggttaaaact attgcggaac tgcgaaaagg taaaattgaa tttaaagctg atcgagctgg 900
tgtatgcaac gtcggagttg cgaagctttc tttcgatagt gcgcaaatac aagaaaatgt 960
tgaagcggtg tgtgcagcct tagttaaagc taagcccgca actgctaaag gacaatattt 1020
agttaatttc actatttctt cgaccatggg gccaggggtt accgtggata ctagggaggt 1080
gattgcgtta taattctaag tttaaagagg aaaaatgaaa gaagagaaaa agttgctgct 1140
tcgcgaggtt gaagaaaaga taaccgcttc tcggcacgag 1180

```

<210> 61
 <211> 1215
 <212> DNA
 <213> Chlamydia trachomatis

<400> 61

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attacagcgt gtgcaggtaa cgacatcatt gcatgatgct tttgatggca ttgatgcggc 60
attccttata gggtcagttc ctagaggccc aggaatggag agaagagatc ttctaaagaa 120
aaatggggag attgttgcta cgcaaggaaa agctttgaac acaacagcca agcgggatgc 180
aaagattttt gttgttgga accctgtgaa taccaattgc tggatagcaa tgaatcatgc 240
toccagatta ttgagaaaaga actttcatgc gatgctacga ttggaccaga atcgtatgca 300
tagcatgtta tcgcatagag cagaagtacc tttatcggct gtatcacaag ttgtggtttg 360
gggaaatcac tccgccaaac aagtgcctga ttttacgcaa gctctgatta atgaccgtcc 420
tatcgcagag acgatagcgg atcgtgattg gttagagaat attatgggtc cttctgtaca 480
gagtcgtggt agtgcagtaa ttgaagcacg agggaaagtct tcggcagctt ctgcagcacg 540
agcttttagc gaggtgctc gatcaatata tcagccaaaa gaaggactcg tgccgaattc 600
ggcacgagta tcgaaattgc aggcatttct agtgaatggt cgtatgctta taaactacgt 660
ggtacagact tgagctctca aaagtttgct acagattctt acatcgcaga cccttattct 720
aagaatatct actccctca actatttga tccctaaac aagaaaagga ttacgcattt 780
agttacctga aatatgagga ttttgactgg gaaggcgaca ctcttttgca ccttccaaaa 840
gaaaattact tcatttatga aatgcatggt cggtcattca cccgagatcc gtcttcccag 900
gtttcccatc ctggaacttt ccttggtatc atcgaaaaaa tagaccacct caaacaacta 960
ggcgttcatg cagttgaact ccttcctatt ttogaattcg atgaaaccgt ccatccattt 1020
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tgccctctc gccgttatat ttatggggca gacccttgcg ctccggcccg agagttcaag 1140
actcttgtca aagcgttaca ccgtgcggga atcgaagtca ttctcgatgt cgttttcaat 1200
catacaggct ttgaa 1215

```


<210> 62
 <211> 688
 <212> DNA
 <213> Chlamydia trachomatis

<400> 62
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 ctaacacttt atcagcgtca tctttgagaa gcatctcaat gagcgctttt tcttctctag 120
 catgccgcac atccgcttct tcatgttctg tgaaatatgc atagtcttca ggattggaaa 180
 atccaaagta ctcagtcaat ccacgaattt tctctctagc gatacgtgga atttgactct 240
 cataagaata caaagcagcc actcctgcag ctaaagaatc tcctgtacac caccgcatga 300
 aagtagctac tttcgctttt gctgcttcac taggctcatg agcctctaac tcttctggag 360
 taactcctag agcaaacaca aactgcttcc acaaatcaat atgattaggg taaccgttct 420
 cttcatccat caagtatatc aacaataact taocgcctc taaatcatcg caacgactat 480
 gaatcgcaga taaatattta ggaaaggctt tgatatgtaa ataatagtct ttggcacgag 540
 cctgtaattg ctcttttagta agctccccct tgcaccattt cacataaaac gtgtgttcta 600
 gcatatgctt attttgaata attaaatcta actgatctaa aaaattcata aacacctcca 660
 tcatttcttt tcttgactcc acgtaacc 688

<210> 63
 <211> 269
 <212> DNA
 <213> Chlamydia trachomatis

<400> 63
 atgttgaaat cacacaagct gttcctaaat atgctacggg aggatctccc tatcctgttg 60
 aaattactgc tacaggtaaa agggattgtg ttgatgttat cattactcag caattaccaa 120
 gtgaagcaga gttcgtacgc agtgatccag cgacaactcc tactgctgat ggtaagctag 180
 tttggaaaat tgaccgctta ggacaaggcg aaaagagtaa aattactgta tgggtaaaac 240
 ctcttaaaga aggttgctgc tttacagct 269

<210> 64
 <211> 1339
 <212> DNA
 <213> Chlamydia trachomatis

<400> 64
 ctttttattat ggcttcttggg gatgatgtca acgatatcga cctgctatct cgaggagatt 60
 ttaaaattgt tatacagacg gctccagagg agatgcatgg attagcggac tttttggctc 120
 ccccgcgcaa ggatcttggg attctctccg cctgggaagc tggtagctg cgttacaaac 180
 agctagttaa tccttaggaa acatttctgg acctatgcc atcacattgg ctccgtgatc 240
 cacatagaga gtttctcccg taattgcgct agctagggga gagactaaga aggctgctgc 300
 tgcgcctact tgctcagctt ccattggaga aggtagtgga gccagctctt ggtagttaac 360
 caccattctc tcaataaatc caatagcttt tcctgcacgg ctagctaatt gccctgccga 420
 gatagtattc actcggactc cccaacgtcg gccggcttcc caagccagta cttttgtatc 480
 acttttctaaa gcagcttttg ctgcgttcat tcctccgcca taccctggaa cagcacgcac 540
 ggaagcaaga taagttagag agatggtgct agctcctgca ttcataattg ggccaaaatg 600
 agagagaagg ctgataaagg agtagctgga tgtaacttaag gcggcaagat agcctttacg 660
 agaggtatca agtaatgggt tagcaatttc cggactgttt gctaaagagt gaacaagaat 720
 atcaatgtgt ccaaaatctt ttttcacctg ttctacaact tcggatacag tgtaccaga 780
 aagatctttg taacgtttat tttccaaaat ttctgagga atatcttctg ggggtgtcgaa 840
 actggcatcc atgggtaga ttttagcgaa agtttagcaat tctccattgg agagttcacg 900
 agatgcattg aattttccta actcccaaga ttgagagaaa atttttataga taggaacca 960
 ggtccccaca agtatggttg cgcctgcttc tgctaacatt ttggcaatgc ccagccata 1020
 cccgttatca tcgcctatgc cggctatgaa agcaattttt cctgttaaat caattttcaa 1080
 catgagctaa ccccatTTTT tcttcttgag agaggagagt agcagattct ttattattga 1140
 gaaacggggc tcataatata taaggagtag attcaactggc tggatccagg tttctagagt 1200

aaagagtttc cttgtcaaatt ttttatatgg gtagaggttaa tcaactgttt tcaagtgtt 1260
 tatgtttatt ttaaaataat ttgttttaac aactgtttta tagttttaat ttttaaagtg 1320
 tgaaaaacag gttttatat 1339

<210> 65
 <211> 195
 <212> PRT
 <213> Chlamydia trachomatis

<400> 65
 Met Gly Ser Leu Val Gly Arg Gln Ala Pro Asp Phe Ser Gly Lys Ala
 5 10 15
 Val Val Cys Gly Glu Glu Lys Glu Ile Ser Leu Ala Asp Phe Arg Gly
 20 25 30
 Lys Tyr Val Val Leu Phe Phe Tyr Pro Lys Asp Phe Thr Tyr Val Cys
 35 40 45
 Pro Thr Glu Leu His Ala Phe Gln Asp Arg Leu Val Asp Phe Glu Glu
 50 55 60
 His Gly Ala Val Val Leu Gly Cys Ser Val Asp Asp Ile Glu Thr His
 65 70 75 80
 Ser Arg Trp Leu Thr Val Ala Arg Asp Ala Gly Gly Ile Glu Gly Thr
 85 90 95
 Glu Tyr Pro Leu Leu Ala Asp Pro Ser Phe Lys Ile Ser Glu Ala Phe
 100 105 110
 Gly Val Leu Asn Pro Glu Gly Ser Leu Ala Leu Arg Ala Thr Phe Leu
 115 120 125
 Ile Asp Lys His Gly Val Ile Arg His Ala Val Ile Asn Asp Leu Pro
 130 135 140
 Leu Gly Arg Ser Ile Asp Glu Glu Leu Arg Ile Leu Asp Ser Leu Ile
 145 150 155 160
 Phe Phe Glu Asn His Gly Met Val Cys Pro Ala Asn Trp Arg Ser Gly
 165 170 175
 Glu Arg Gly Met Val Pro Ser Glu Glu Gly Leu Lys Glu Tyr Phe Gln
 180 185 190
 Thr Met Asp
 195

<210> 66
 <211> 520
 <212> DNA
 <213> Chlamydia

<400> 66
 gatccgaatt cggcagcagg aggaatggaa gggccctccg attttaaatc tgctaccatg 60

```
<210> 67
<211> 276
<212> DNA
<213> Chlamydia
```

```
<210> 68
<211> 248
<212> DNA
<213> Chlamydia
```

```
<210> 69
<211> 715
<212> DNA
<213> Chlamydia
```

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<220>
<221> unsure
<222> (34)
<223> n=A,T,C or G
```

<400> 69						
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ttccttcggt	atcctgcagc	aaataagggtg	gcacactcca	tctcggacag	tttgagcttt	120
attttcatat	agtttttcgac	ggaactcttt	attaaactcc	caaaaccgaa	tgttagtcgt	180
gtgggtgatg	cctatatggt	aagggaggtt	tttggcttcg	agaatatgtg	tgatcatttt	240
ttgtacgaca	aaattagcta	atgcagggac	ctctgggggg	aagtatgcat	ctgatgttcc	300
atcttttcgg	atgctagcaa	cagggcacaa	ataatctcct	atttggtagt	gggatcttaa	360
gcctccgcac	atgcccaaca	tgatcgctgc	tgtagcattg	ggaaggaaag	aacacagatc	420
tacggtaaga	gctgctcctg	gagagcctaa	tttaaaatcg	atgattgaag	tgtgaatttg	480
aggcgcatgc	gctgccgaaa	acatggatcc	tcgagaaaac	gggacctgat	agattttcagc	540
gaaaacatgc	acggtaatac	cmaaatttag	taagaaggag	ataggctcgg	aactcttgaa	600
tggtagatcc	ggtatagcgc	tctagcatgt	cacaggcgat	tgtttcttcg	ctgatttttt	660
tatgttgatg	ggtcataaat	cacagatatt	ataatggtta	gagaatcttt	ttttc	715

<210> 70
 <211> 323
 <212> DNA
 <213> Chlamydia

<400> 70
 gatccgaatt cggcacgagc agaacgtaaa cagcacactt aaaccgtgta tgagggtttaa 60
 cactgttttg caagcaaaca accattcctc tttccacatc gttcttacca atacctctga 120
 ggagcaatcc aacattctct cctgcacgac cttctgggag ttcttttctg aacatttcaa 180
 ccccgtaac aatcgtttct ttagtatctc taagaccgac caactgaact ttatcggaaa 240
 ctttaacaat tccacgctca atacgtccag ttactacagt tcctcgtccg gagatagaga 300
 acacgtcctc aatgggcatt aag 323

<210> 71
 <211> 715
 <212> DNA
 <213> Chlamydia

<400> 71
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 ataccggctc taccattcaa gagttccagc cctatctcct tcttactaat tttgggtatt 180
 acgtggatgt tttcgctgaa atctatcagg tccctgtttc tcgaggatcc atgttttcgg 240
 gcagcgcagc cgcctcaaata tcacacctca atcatcgatt ttaaattagg ctctccagga 300
 gcagctctta ccgtagatct gtgtttcttcc cttcccaatg ctacagcagc gatcatgttg 360
 ggcattgtgc gaggtttaag atcccaactac caaataggag attattttgt ccctgttgct 420
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 aattttgtcg taaaaaaaat gatcaccaat attctcgaag ccaaaaacct cccttaccat 540
 ataggcatca cccacacgac taacattcgg ttttgggagt ttaataaaga gttccgctga 600
 aaactatatg aaaataaagc tcaaactgtc gagatggagt gtgccacctt atttgctgca 660
 ggataccgaa ggaatcttcc tttaggagca cttttgctga tatcggatct acctt 715

<210> 72
 <211> 641
 <212> DNA
 <213> Chlamydia

<220>
 <221> unsure
 <222> (550)
 <223> n=A,T,C or G
 <221> unsure
 <222> (559)
 <223> n=A,T,C or G
 <221> unsure
 <222> (575)
 <223> n=A,T,C or G
 <221> unsure
 <222> (583)
 <223> n=A,T,C or G
 <221> unsure
 <222> (634)
 <223> n=A,T,C or G
 <221> unsure
 <222> (638)
 <223> n=A,T,C or G

<400> 72

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cctgattctc taccagtcgg cgttcctgca agtttcgata gaaatcttgc acaatagcag 180
gatgataagc gttcgtagtt ctggaaaaga aatctacaga aattcccaat ttcttgaagg 240
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ctgcattaag ggtaattgag attccgtatt catcagaacc acaaataatac aaaacctctt 360
tgcctttagt tctctgaaaa cgcgcataaa catctgcagg caaataagca ccggtaatat 420
gtccaaaatg caaaggacca tttgcgtaag gcaacgcaga agtaataaga atacgggaag 480
attccactat ttcacgtcgc tccagttgta cagagaagga tcttttcttc tggatgttcc 540
gaaaccttgn tctcttcgnc tctctcctgt agcanacaaa tgnctctctc gacatctctt 600
tcagcgtatt cggactgatg ccctaaagat cccnggangt t 641

```

<210> 73

<211> 584

<212> DNA

<213> Chlamydia

<220>

<221> unsure

<222> (460)

<223> n=A,T,C or G

<221> unsure

<222> (523)

<223> n=A,T,C or G

<221> unsure

<222> (541)

<223> n=A,T,C or G

<221> unsure

<222> (546)

<223> n=A,T,C or G

<400> 73

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gacttattac ggaacgagta aggcgggagat ttctagagtt ctgcaaaagg gtaagcactg 180
catagccgtg attgatgtac aaggagcttt ggctctgaag aagcaaatgc cggcagtcac 240
tattttttatt caagctccct ctcaagaaga acttgagcgc cgtttgaatg ctcgggattc 300
agagaaagat ttccagaaga aagaaagatt agagcatagc gctgtcgaaa ttgctgccgc 360
tagcgaattt gattatgttg tggttaatga tgatttgatt acagcatatc aagttttaag 420
aagtattttt atagctgaag aacataggat gagtcatggn tagaaaagat cgtttaacta 480
atgaaagact gaataagcta tttgatagcc cctttagttt ggntaattac gtaattaagc 540
nagctnagaa caaaattgct agaggagatg ttcgttcttc taac 584

```

<210> 74

<211> 465

<212> DNA

<213> Chlamydia

<400> 74

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gatccgaatt cggcacgagc tcgtgccgtt tgggatcgtg taatcgcata ggagaatggt 60
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caatgcggcg tggagtactg ggtatcgggc tgtgttggtg tggattttct ccattacaca 180
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tagatgcctt agcagttgag gctgttggtt gtatgggaga ggggaatgag caaacaccgt 300
tagcgggtgat agagcaggca cctaatatgg tctaccatto atatcctact tctcgagaag 360
agtattgttc tttgcgcata gatgaaacag aggacttata cggacctttt ttgcaagcgg 420

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ttaccgtgga gtcaagaaaa gaaatgatgg aggtgtttat gaatt

465

<210> 75
 <211> 545
 <212> DNA
 <213> Chlamydia

<400> 75
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 aaagttttct tccaaaaacc tcttcctctc ttgatttagtg atccctctgc aactacttta 120
 ctatatgttc tgtgaaatat gcatagtctt caggattgga aaatccaaag tactcagtca 180
 atccacgaat tttctctcta gcgatacgtg gaatttgact ctcataagaa taaaaagcag 240
 ccactcctgc agctaaagaa tctcctgtac accacgcgat gaaagtagct actttcgctt 300
 ttgctgcttc actaggctca tgagcctcta actcttctgg agtaactcct agagcaaaca 360
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 ctaacaataa cttacgcgcc tctaaatcat cgcaacgact atgaatcgca gataaatatt 480
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 taagc 545

<210> 76
 <211> 797
 <212> DNA
 <213> Chlamydia

<220>
 <221> unsure
 <222> (788)
 <223> n=A,T,C or G
 <221> unsure
 <222> (789)
 <223> n=A,T,C or G

<400> 76
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 caatctgaga ttccaacgtc acctacctca acacagcctc catcacccta acttgtaaaa 180
 actgtaataa aaagagcgcg cttcctttat gcaaaatcaa tttgaacaac tccttactga 240
 attagggact caaatcaaca gccctcttac tcttgattcc aataatgcct gtatagttcg 300
 ctttgatata aacaattgtg ctgtacaaat tgaagaggat ggtaattcag gatttttagt 360
 tgctggagtc atgcttgtaa aacttccaga gaataccttt agacaaaaaa ttttcaaagc 420
 tgctttgtct atcaatggat ctccgcaatc taatattaaa ggcaactctag gatacggatga 480
 aatctctaac caactctatc tctgtgatcg gcttaacatg acctatctaa atggagaaaa 540
 gctcgcccgt tacttagttc ttttttcgca gcagccaat atctggatgc aatctatctc 600
 aaaaggagaa cttccagatt tacatgctct aggtatgtat cacctgtaaa ttatgccgtc 660
 attatcccaa tcccgcagta tcatccagca atcttccatt cgaaagattt ggaatcagat 720
 agatacttct cctaagcatg ggggtatgcg taccggttat ttttctcttc atactcaaaa 780
 aaagttgnng ggaata 797

<210> 77
 <211> 399
 <212> DNA
 <213> Chlamydia

<400> 77
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 aaaaagttaa aaataagtct gacatatatt tatggaatag gatcagctcg ttctgatgaa 120
 atcattaaaa agttgaagtt agatcctgag gcaagagcct ctgaattaac tgaagaagaa 180

gtaggacgac tgaactctct gctacaatca gaatataccg tagaagggga tttgcgacgt 240
 cgtgttcaat cggatatcaa aagattgata gccatccatt cttatcgagg tcagagacat 300
 agactttctt taccagtaag aggacaacgt acaaaaacta attctcgtac tcgaaaaggt 360
 aaaagaaaaa cagtcgcagg taagaagaaa taagaattc 399

<210> 78
 <211> 285
 <212> DNA
 <213> Chlamydia

<400> 78
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 attgtaaaga aagtttggga atacattaaa aaacacaact gtcaggatca aaaaataaaa 180
 cgtaatatcc ttcccgatgc gaatcttgcc aaagtctttg gctctagtga tcctatcgac 240
 atgttccaaa tgaccaaagc cctttccaaa catattgtaa aataa 285

<210> 79
 <211> 950
 <212> DNA
 <213> Chlamydia

<400> 79
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 tatccaagag acttacgatt tagctaagtc gtattctttg ggtgaagcga tagatatttt 240
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 tgcgttataa ttctaagttt aaagaggaaa aatgaaagaa gagaaaaagt tgctgcttcg 900
 cgaggttgaa gaaaagataa ccgcttctca aggttttatt ttgttgagat 950

<210> 80
 <211> 395
 <212> DNA
 <213> Chlamydia

<400> 80
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 agtaggtgtt cctacttgcg atagcatcgt tcttagtctt gatatccaca ggttggtata 180
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 gaccattgac atttgagatc ccagaatcga gttcgcatag aaatgattgt ctctaggtac 300
 ataagcccat tgtctataag agtcaaatcc ccagagcgct gagatcgttc cattttgtag 360
 ttgatcagga tccagagtga gtgttcctgt atatac 395

<210> 81
 <211> 2085
 <212> DNA

<213> Chlamydia

<400> 81

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agtctcagtt agaacaattt gctcaagtag gtttagatac aagttggcaa gttgttttcg 180
atccaggaat aggatttggg aagactcccg ttcagtcgat gttattgatg gatggagtaa 240
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tatctcttca tgatcgagga gttgattatc tacgtgtgca tcaggttgaa ggtaacagac 420
gtgccttagc cgctgctgct tgggctggta tgtttgtatg atccaagcaa caggtatcgt 480
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tgtgtttgct ctaggagtta ctccagaaga gtttagaggct catgagccta gtgaagcagc 1980
aaaagcgaaa gtagctactt tcatgcggtg gtgtacagga gattcttttag ctgcaggagt 2040
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<210> 82

<211> 405

<212> DNA

<213> Chlamydia

<400> 82

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ttcatcggtc tagttcgcta ttctactctc caatggttcc gcatttttgg gcagagcttc 60
gcaatcatta tgcaacgagt gttttgaaaa gcgggtacaa tattgggagt accgatgggt 120
ttctccctgt cattgggcct gttatatggg agtcggaggg tcttttccgc gcttatattt 180
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attggctcca taaagggagg agaaaacttc gatatagggg atcgtatcaa ggtgaaagta 360
gcaaaaaata aattagctcc tccattccga actgcagaat ttgat 405

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<210> 83

<211> 379

<212> DNA

<213> Chlamydia

<400> 83

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ttccctacgt	atcactttgc	taatgtagtt	gatgatcatt	tgatggggat	tacccatgtg	180
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ctttccaaga	gaaagaatcc	tactttctatt	ttttactatc	gggatgctgg	atacaaaaaa	360
gaagcgttca	tgaattttcc					379

<210> 84

<211> 715

<212> DNA

<213> Chlamydia

<400> 84

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cgccttccat	tcttgatgca	ataatatctg	ctgagactaa	gaacatgctc	ccagagcttt	180
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caatagtatc	agcaattcca	ccaagaattt	gatctcccaa	cttttctaga	ataagctggg	420
aagctttttc	cgcattccaaa	ccaattgtta	tagaagcatt	ggttgatgga	ttattggaga	480
ctgttaaaga	tattccatca	gaagctgtca	ttttggctgc	gacaggtgtt	gatgttgtcc	540
caaggattat	ttgctggtcc	ttgagcggct	ctgtcatttg	cccaactttg	atattatcag	600
caaagacgca	gttttgagtg	ttatacaaat	aaaaaccaga	atttccatt	ttaaaaactct	660
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<210> 85

<211> 476

<212> DNA

<213> Chlamydia

<400> 85

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cgattacgtt	tatcatggat	aagcgtaatt	ggatagaaac	cgagtctgaa	caggtacaag	120
tggtttttcg	agatagtaca	gcttgcttag	gaggaggcgc	tattgcagct	caagaaattg	180
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taggacaaat	ggagtaccag	ggaggaggag	ctctattttg	tgaaaatatt	tctctttctg	420
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<210> 86

<211> 1551

<212> DNA

<213> Chlamydia

<400> 86

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aacctactct	catgtattac	gggattttatc	tgtgagtatg	gatgcgctgt	tttctcgtaa	120
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gggaatggaa	aaagttagtt	tcggctggta	tgtcaaacac	gcttcttgga	ttgcttttagc	360
cagttatttt	ggaggtctag	cagtctattt	tctaattggaa	aattgtgtga	atttgttcgt	420

ttgaggtagt	cagtatggca	gagtttcttt	aaaaattctt	ttaataaaaag	ggttctctgc	480
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atatttcttc	ggtgactgat	ggggatggta	agagccataa	agtaggattt	ctaagaattc	1500
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<210> 87

<211> 3031

<212> DNA

<213> Chlamydia

<400> 87

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aagatagtca	ggctgaagga	cagtataggt	taattgtagg	agatccaagt	tctttccaag	120
agaaagatgc	agatactctt	cccgggaagg	tagagcaaag	tactttgttc	tcagtaacca	180
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<210> 88
<211> 976
<212> DNA
<213> Chlamydia
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<210> 89
<211> 94
<212> PRT
<213> Chlamydia
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Phe Met His Pro Val Asn Ile Ser Thr Asp Leu Ala Val Ile Val Gly
20 25 30

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<210> 90
<211> 474
<212> PRT
<213> Chlamydia
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Val	Val	Ile	Gly	Ala	Gly	Pro	Gly	Gly	Tyr	Val	Ala	Ala	Ile	Thr	Ala
			20					25					30		
Ala	Gln	Ala	Gly	Leu	Lys	Thr	Ala	Leu	Ile	Glu	Lys	Arg	Glu	Ala	Gly
		35					40					45			
Gly	Thr	Cys	Leu	Asn	Arg	Gly	Cys	Ile	Pro	Ser	Lys	Ala	Leu	Leu	Ala
	50					55					60				
Gly	Ala	Glu	Val	Val	Thr	Gln	Ile	Arg	His	Ala	Asp	Gln	Phe	Gly	Ile
65					70					75					80
His	Val	Glu	Gly	Phe	Ser	Ile	Asn	Tyr	Pro	Ala	Met	Val	Gln	Arg	Lys
				85				90						95	
Asp	Ser	Val	Val	Arg	Ser	Ile	Arg	Asp	Gly	Leu	Asn	Gly	Leu	Ile	Arg
			100					105					110		
Ser	Asn	Lys	Ile	Thr	Val	Phe	Ser	Gly	Arg	Gly	Ser	Leu	Ile	Ser	Ser
		115					120					125			
Thr	Glu	Val	Lys	Ile	Leu	Gly	Glu	Asn	Pro	Ser	Val	Ile	Lys	Ala	His
	130					135					140				
Ser	Ile	Ile	Leu	Ala	Thr	Gly	Ser	Glu	Pro	Arg	Ala	Phe	Pro	Gly	Ile
145					150					155					160
Pro	Phe	Ser	Ala	Glu	Ser	Pro	Arg	Ile	Leu	Cys	Ser	Thr	Gly	Val	Leu
				165					170					175	
Asn	Leu	Lys	Glu	Ile	Pro	Gln	Lys	Met	Ala	Ile	Ile	Gly	Gly	Gly	Val
			180					185					190		
Ile	Gly	Cys	Glu	Phe	Ala	Ser	Leu	Phe	His	Thr	Leu	Gly	Ser	Glu	Val
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<210> 91
<211> 129
<212> PRT
<213> Chlamydia
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<400> 91
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5 10 15
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20 25 30
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35 40 45
Glu Ala Arg Ala Ser Glu Leu Thr Glu Glu Glu Val Gly Arg Leu Asn
50 55 60
Ser Leu Leu Gln Ser Glu Tyr Thr Val Glu Gly Asp Leu Arg Arg Arg
65 70 75 80
Val Gln Ser Asp Ile Lys Arg Leu Ile Ala Ile His Ser Tyr Arg Gly
85 90 95
Gln Arg His Arg Leu Ser Leu Pro Val Arg Gly Gln Arg Thr Lys Thr
100 105 110
Asn Ser Arg Thr Arg Lys Gly Lys Arg Lys Thr Val Ala Gly Lys Lys
115 120 125
Lys

<210> 92
<211> 202
<212> PRT
<213> Chlamydia

<400> 92
Met His His His His His His Met Gly Ser Leu Val Gly Arg Gln Ala
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Pro Asp Phe Ser Gly Lys Ala Val Val Cys Gly Glu Glu Lys Glu Ile
20 25 30
Ser Leu Ala Asp Phe Arg Gly Lys Tyr Val Val Leu Phe Phe Tyr Pro
35 40 45
Lys Asp Phe Thr Tyr Val Cys Pro Thr Glu Leu His Ala Phe Gln Asp
50 55 60
Arg Leu Val Asp Phe Glu Glu His Gly Ala Val Val Leu Gly Cys Ser
65 70 75 80
Val Asp Asp Ile Glu Thr His Ser Arg Trp Leu Thr Val Ala Arg Asp
85 90 95
Ala Gly Gly Ile Glu Gly Thr Glu Tyr Pro Leu Leu Ala Asp Pro Ser
100 105 110

Phe Lys Ile Ser Glu Ala Phe Gly Val Leu Asn Pro Glu Gly Ser Leu
 115 120 125
 Ala Leu Arg Ala Thr Phe Leu Ile Asp Lys His Gly Val Ile Arg His
 130 135 140
 Ala Val Ile Asn Asp Leu Pro Leu Gly Arg Ser Ile Asp Glu Glu Leu
 145 150 155 160
 Arg Ile Leu Asp Ser Leu Ile Phe Phe Glu Asn His Gly Met Val Cys
 165 170 175
 Pro Ala Asn Trp Arg Ser Gly Glu Arg Gly Met Val Pro Ser Glu Glu
 180 185 190
 Gly Leu Lys Glu Tyr Phe Gln Thr Met Asp
 195 200

<210> 93
 <211> 19
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> made in a lab

<400> 93
 Glu Asn Ser Leu Gln Asp Pro Thr Asn Lys Arg Asn Ile Asn Pro Asp
 1 5 10 15
 Asp Lys Leu

<210> 94
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 94
 Asp Pro Thr Asn Lys Arg Asn Ile Asn Pro Asp Asp Lys Leu Ala Lys
 1 5 10 15
 Val Phe Gly Thr
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<210> 95
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 95

Lys Arg Asn Ile Asn Pro Asp Asp Lys Leu Ala Lys Val Phe Gly Thr
 1 5 10 15
 Glu Lys Pro Ile
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<210> 96
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 96
 Asp Asp Lys Leu Ala Lys Val Phe Gly Thr Glu Lys Pro Ile Asp Met
 1 5 10 15
 Phe Gln Met Thr
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<210> 97
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 97
 Lys Val Phe Gly Thr Glu Lys Pro Ile Asp Met Phe Gln Met Thr Lys
 1 5 10 15
 Met Val Ser Gln
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<210> 98
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 98
 Asn Lys Arg Asn Ile Asn Pro Asp Asp Lys Leu Ala Lys Val Phe Gly
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<210> 99
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 99
 Asn Lys Arg Asn Ile Leu Pro Asp Ala Asn Leu Ala Lys Val Phe Gly

1 5 10 15

<210> 100
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 100
 Lys Met Trp Asp Tyr Ile Lys Glu Asn Ser Leu Gln Asp Pro Thr
 1 5 10 15

<210> 101
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 101
 Thr Glu Ile Val Lys Lys Val Trp Glu Tyr Ile Lys Lys His Asn Cys
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 Gln Asp Gln Lys
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<210> 102
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 102
 Lys Val Trp Glu Tyr Ile Lys Lys His Asn Cys Gln Asp Gln Lys Asn
 1 5 10 15
 Lys Arg Asn Ile
 20

<210> 103
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 103
 Lys Val Trp Glu Tyr Ile Lys Lys His Asn Cys Gln Asp Gln Lys
 1 5 10 15

<210> 104
 <211> 20
 <212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 104

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Ser	Asp	Tyr	Val												
			20												

<210> 105

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 105

Leu	Gln	Ser	Asp	Tyr	Val	Val	Glu	Gly	Asp	Leu	Arg	Arg	Arg	Val	Gln
1				5				10						15	
Ser	Asp	Ile	Lys	Arg											
			20												

<210> 106

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 106

Met	Pro	Arg	Ile	Ile	Gly	Ile	Asp	Ile	Pro	Ala	Lys	Lys	Lys	Leu	Lys
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Ile	Ser	Leu	Thr												
			20												

<210> 107

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 107

Ala	Glu	Leu	Thr	Glu	Glu	Glu	Val	Gly	Arg	Leu	Asn	Ala	Leu	Leu	Gln
1				5				10						15	
Ser	Asp	Tyr	Val												
			20												

<210> 108

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 108

Leu Asn Ala Leu Leu Gln Ser Asp Tyr Val Val Glu Gly Asp Leu Arg
 1 5 10 15
 Arg Arg Val Gln
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<210> 109

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 109

Leu Asn Ser Leu Leu Gln Ser Glu Tyr Thr Val Glu Gly Asp Leu Arg
 1 5 10 15
 Arg Arg Val Gln
 20

<210> 110

<211> 1461

<212> DNA

<213> Chlamydia

<400> 110

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<210> 111

<211> 267
 <212> DNA
 <213> Chlamydia

<400> 111
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 gaaaagctat gttggaagac atcgctatct taactggcgg tcaactcatt agcgaagagt 180
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 tttctaaaaga agacacgacc atcgtcg 267

<210> 112
 <211> 698
 <212> DNA
 <213> Chlamydia

<400> 112
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 agatctgagc caactgaaaa aatacacagt tctctacatc aagaagctgc tcgaaacctta 180
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<210> 113
 <211> 1142
 <212> DNA
 <213> Chlamydia

<400> 113
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 aacgaaaaaa gaaggtatct tgattccttc tgcagggatt gatgaatcga atacggacca 180
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 ca 1142

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ggaaccctta cttgtaaaaa ctctcaccgt ctacaatttt tgaaaaactc ttccgataaa 180
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caaggtggag gaatctacgg agaagacaac atcaccctat ctaatttgac agggaagact 240
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 aaagctctta caatgacagg actggatagt ttctgtttaa ttaataacac atcagaaaaa 360
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<210> 117
 <211> 446
 <212> DNA
 <213> Chlamydia

<400> 117
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 aggacaaat taccgaaaa gttaaggggtg gtttgatcgt agatattggg atggaagcct 180
 tccttcagg atcccaaata gacaataaga agatcaagaa cttagatgat tacgtaggca 240
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 gaagagaact tctcgaagct gaacgcattt ctaagaaagc agagttgatc gagcaaatca 360
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<210> 118
 <211> 951
 <212> DNA
 <213> Chlamydia

<400> 118
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<210> 119
 <211> 953
 <212> DNA
 <213> Chlamydia

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<210> 120
<211> 897
<212> DNA
<213> Chlamydia

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<220>
<221> misc_feature
<222> (1)...(897)
<223> n = A, C, T or G

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acacagccca gcaataaaaat ggcaagggtg gtaaataaga cgaagggaat ggataagact 120
gttaaggtcg ccaagtctgc tgccgaattg accgcaataa ttttgaaca agctggaggc 180
gcgggctctt ccgcacacat tacagcttcc caagtgtcca aaggattagg ggatgcgaga 240
actgttctcg ctttagggaa tgcttttaac ggagcgttgc caggaacagt tcaaagtgcg 300
caaagcttct tctcttacat gaaagctgct agtcagaaac cgcaagaagg ggatgagggg 360
ctcgtagcag atcttttgtg gtctcataag cgcagacggt ctgcggctgt ctgtagcttc 420
atcgaggaa ttacctacct cgcgacattc ggagctatcc gtccgattct gtttgtcaac 480
aaaatgctgg cgcaaccgtt tctttcttcc caaatataag caaatatggg atcttctggt 540
agctatatta tggcggtctaa ccatgcagcg tttgtggtgg gttctggact cgctatcagt 600
gcggaagag cagattgcga agcccgtgc gctcgtattg cgagagaaga gtcgtcactc 660
gaattgtcgg gagaggaaaa tgcttgcgag aggagagtcg ctggagagaa agccaagacg 720
ttcacgcgca tcaagtatgc actcctcact atgctcgaga agtttttgga atgcgttgcc 780
gacgttttca aattggtgcc gttgcctatt acaatgggta ttcgtgcaat tgtggctgcg 840
ggatgtacgt tcacttctgc agttattgga ttgtggactt tctgcgccag agcataa 897

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<210> 121
<211> 298
<212> PRT
<213> Chlamydia

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<400> 121
Met Ala Ser Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu
 1           5           10           15
Lys Ala Phe Phe Thr Gln Pro Ser Asn Lys Met Ala Arg Val Val Asn
          20          25          30
Lys Thr Lys Gly Met Asp Lys Thr Val Lys Val Ala Lys Ser Ala Ala
          35          40          45
Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser
          50          55          60
Ala His Ile Thr Ala Ser Gln Val Ser Lys Gly Leu Gly Asp Ala Arg
          65          70          75          80
Thr Val Leu Ala Leu Gly Asn Ala Phe Asn Gly Ala Leu Pro Gly Thr
          85          90          95

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Val Gln Ser Ala Gln Ser Phe Phe Ser Tyr Met Lys Ala Ala Ser Gln
 100 105 110
 Lys Pro Gln Glu Gly Asp Glu Gly Leu Val Ala Asp Leu Cys Val Ser
 115 120 125
 His Lys Arg Arg Ala Ala Ala Val Cys Ser Phe Ile Gly Gly Ile
 130 135 140
 Thr Tyr Leu Ala Thr Phe Gly Ala Ile Arg Pro Ile Leu Phe Val Asn
 145 150 155 160
 Lys Met Leu Ala Gln Pro Phe Leu Ser Ser Gln Ile Lys Ala Asn Met
 165 170 175
 Gly Ser Ser Val Ser Tyr Ile Met Ala Ala Asn His Ala Ala Phe Val
 180 185 190
 Val Gly Ser Gly Leu Ala Ile Ser Ala Glu Arg Ala Asp Cys Glu Ala
 195 200 205
 Arg Cys Ala Arg Ile Ala Arg Glu Glu Ser Ser Leu Glu Leu Ser Gly
 210 215 220
 Glu Glu Asn Ala Cys Glu Arg Arg Val Ala Gly Glu Lys Ala Lys Thr
 225 230 235 240
 Phe Thr Arg Ile Lys Tyr Ala Leu Leu Thr Met Leu Glu Lys Phe Leu
 245 250 255
 Glu Cys Val Ala Asp Val Phe Lys Leu Val Pro Leu Pro Ile Thr Met
 260 265 270
 Gly Ile Arg Ala Ile Val Ala Ala Gly Cys Thr Phe Thr Ser Ala Val
 275 280 285
 Ile Gly Leu Trp Thr Phe Cys Ala Arg Ala
 290 295

<210> 122
 <211> 897
 <212> DNA
 <213> Chlamydia

<400> 122
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 acacagccca gcaataaaat ggcaagggtta gtaaataaga cgaagggaat ggataagact 120
 gttaaggtcg ccaagtctgc tgccgaattg accgcaaata ttttgggaaca agctggaggc 180
 gcgggctctt ccgcacacat tacagcttcc caagtgtcca aaggattagg ggatacgaga 240
 actgttgctg ctttagggaa tgcctttaac ggagcgttgc caggaacagt tcaaagtgcg 300
 caaagcttct tctctcacat gaaagctgct agtcagaaaa cgcaagaagg g gatgagggg 360
 ctcacagcag atctttgtgt gtctcataag cgcagagcgg ctgcggtgt ctgtggcttc 420
 atcggaggaa ttacctacct cgcgacattc ggagttatcc gtccgattct gtttgtcaac 480
 aaaatgctgg tgaacccgtt tctttcttcc caaactaaag caaatatggg atcttctgtt 540
 agctatatta tggcggttaa ccatgcagcg tctgtggtgg gtgctggact cgctatcagt 600
 gcggaagag cagattgcga agcccgtgc gctcgtattg cgagagaaga gtcgttactc 660
 gaagtgtcgg gagaggaaaa tgcttgcgag aagagagtcg ctggagagaa agccaagacg 720
 ttcacgcgca tcaagtatgc actcctcact atgctcgaga agtttttggg atgcgttgcc 780
 gacgttttca aattgggtgc gctgcctatt acaatgggta ttcgtgcgat tgtggctgct 840
 g gatgtacgt tcacttctgc aattattgga ttgtgcactt tctgcgccag agcataa 897

<210> 123
 <211> 298
 <212> PRT
 <213> Chlamydia

<400> 123
 Met Ala Ser Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu
 1 5 10 15

<210> 124
<211> 897
<212> DNA
<213> Chlamydia

<400> 124						
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acacagcca	acaataaaat	ggcaagggtta	gtaaataaga	cgaagggaat	ggataagact	120
attaaggttg	ccaagtctgc	tgccgaattg	accgcaaata	ttttggaaca	agctggaggc	180
gcgggctctt	ccgcacacat	tacagcttcc	caagtgtcca	aaggattagg	ggatgcgaga	240
actgttgtcg	ctttagggaa	tgcctttaac	ggagcgttgc	caggaacagt	tcaaagtcgc	300
caaaagcttct	tctctcacat	gaaagctgct	agtcagaaaa	cgcagaagg	ggatgagggg	360
ctcacagcag	atcttttgtgt	gtctcataag	cgcagagcgg	ctgcggctgt	ctgtagcatc	420
atcggaggaa	ttacctacct	cgcgacattc	ggagctatcc	gtccgattct	gtttgtcaac	480
aaaatgctgg	caaaaccggt	tctttcttcc	caaactaaag	caaatatggg	atcttctgtt	540
agctatatta	tggcggctaa	ccatgcagcg	tctgtggtgg	gtgctggact	cgctatcagt	600
gcggaaaagag	cagattgcga	agcccgctgc	gctcgtattg	cgagagaaga	gtcgttactc	660
gaagtgccgg	gagaggaaaa	tgcttgcgag	aagaaagctg	ctggagagaa	atcgcaagacg	720
ttcacgctgc	tcaagtattgc	actcctcact	atgctcgaga	agttttttga	atgcgttgcc	780
gacgttttca	aattggtgcc	gctgcctatt	acaatgggta	ttcgtgcgat	tgtggctgct	840

897

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<210> 125
<211> 298
<212> PRT
<213> Chlamydia
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	<400> 125														
Met 1	Ala	Ser	Ile	Cys 5	Gly	Arg	Leu	Gly	Ser 10	Gly	Thr	Gly	Asn 15	Ala	Leu
Lys	Ala	Phe	Phe 20	Thr	Gln	Pro	Asn	Asn 25	Lys	Met	Ala	Arg	Val 30	Val	Asn
Lys	Thr	Lys 35	Gly	Met	Asp	Lys	Thr 40	Ile	Lys	Val	Ala	Lys 45	Ser	Ala	Ala
Glu	Leu 50	Thr	Ala	Asn	Ile	Leu 55	Glu	Gln	Ala	Gly	Gly 60	Ala	Gly	Ser	Ser
Ala 65	His	Ile	Thr	Ala	Ser 70	Gln	Val	Ser	Lys	Gly 75	Leu	Gly	Asp	Ala	Arg 80
Thr	Val	Val	Ala	Leu 85	Gly	Asn	Ala	Phe	Asn 90	Gly	Ala	Leu	Pro	Gly 95	Thr
Val	Gln	Ser	Ala 100	Gln	Ser	Phe	Phe	Ser 105	His	Met	Lys	Ala	Ala	Ser	Gln
Lys	Thr	Gln 115	Glu	Gly	Asp	Glu	Gly 120	Leu	Thr	Ala	Asp	Leu 125	Cys	Val	Ser
His	Lys 130	Arg	Arg	Ala	Ala	Ala 135	Ala	Val	Cys	Ser	Ile 140	Ile	Gly	Gly	Ile
Thr 145	Tyr	Leu	Ala	Thr	Phe 150	Gly	Ala	Ile	Arg	Pro 155	Ile	Leu	Phe	Val	Asn 160
Lys	Met	Leu	Ala	Lys 165	Pro	Phe	Leu	Ser	Ser 170	Gln	Thr	Lys	Ala	Asn 175	Met
Gly	Ser	Ser 180	Val	Ser	Tyr	Ile	Met	Ala 185	Ala	Asn	His	Ala	Ala	Ser	Val
Val	Gly 195	Ala	Gly	Leu	Ala	Ile	Ser 200	Ala	Glu	Arg	Ala	Asp 205	Cys	Glu	Ala
Arg	Cys 210	Ala	Arg	Ile	Ala	Arg 215	Glu	Glu	Ser	Leu	Leu	Glu	Val	Pro	Gly
Glu 225	Glu	Asn	Ala	Cys	Glu 230	Lys	Lys	Val	Ala	Gly 235	Glu	Lys	Ala	Lys	Thr 240
Phe	Thr	Arg	Ile	Lys 245	Tyr	Ala	Leu	Leu	Thr 250	Met	Leu	Glu	Lys	Phe 255	Leu
Glu	Cys	Val	Ala 260	Asp	Val	Phe	Lys	Leu 265	Val	Pro	Leu	Pro	Ile 270	Thr	Met
Gly	Ile	Arg 275	Ala	Ile	Val	Ala	Ala 280	Gly	Cys	Thr	Phe	Thr 285	Ser	Ala	Ile
Ile	Gly 290	Leu	Cys	Thr	Phe	Cys 295	Ala	Arg	Ala						

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<210> 126
<211> 897
<212> DNA
<213> Chlamydia
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<400>	126					
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attaaggttg	ccaagtcctgc	tgcgcaattg	accgcaata	ttttggaaca	agctggaggc	180
cqgggctctt	ccgcacacat	tacagcttcc	caagtgctcca	aaggattagg	ggaatgcgaga	240

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actgttgctcg ctttagggaa tgcctttaac ggagcgttgc caggaacagt tcaaagtgcg 300
caaagcttct tctctcacat gaaagctgct agtcagaaaa cgcaagaagg ggatgagggg 360
ctcacagcag atctttgtgt gtctcataag cgcagagcgg ctgcggctgt ctgtagcatc 420
atcggaggaa ttacctacct cgcgacattc ggagctatcc gtccgattct gtttgtcaac 480
aaaatgctgg caaaaccgtt tctttcttcc caaactaaag caaatatggg atcttctgtt 540
agctatatta tggcggctaa ccattgcagcg tctgtggtgg gtgctggact cgctatcagt 600
gcggaaagag cagattgcga agccogctgc gctcgtattg cgagagaaga gtcgttactc 660
gaagtgccgg gagaggaaaa tgcttgcgag aagaaagtcg ctggagagaa agccaagacg 720
ttcacgcgca tcaagtatgc actcctcact atgctcgaga agtttttggg atgcgttgcc 780
gacgttttca aattggtgcc gctgcctatt acaatgggta ttcgtgcgat tgtggctgct 840
ggatgtacgt tcacttctgc aattattgga ttgtgcactt tctgcgccag agcataa 897

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<210> 127

<211> 298

<212> PRT

<213> Chlamydia

<400> 127

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Met Ala Ser Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu
1          5          10          15
Lys Ala Phe Phe Thr Gln Pro Asn Asn Lys Met Ala Arg Val Val Asn
20          25          30
Lys Thr Lys Gly Met Asp Lys Thr Ile Lys Val Ala Lys Ser Ala Ala
35          40          45
Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser
50          55          60
Ala His Ile Thr Ala Ser Gln Val Ser Lys Gly Leu Gly Asp Ala Arg
65          70          75          80
Thr Val Val Ala Leu Gly Asn Ala Phe Asn Gly Ala Leu Pro Gly Thr
85          90          95
Val Gln Ser Ala Gln Ser Phe Phe Ser His Met Lys Ala Ala Ser Gln
100          105          110
Lys Thr Gln Glu Gly Asp Glu Gly Leu Thr Ala Asp Leu Cys Val Ser
115          120          125
His Lys Arg Arg Ala Ala Ala Val Cys Ser Ile Ile Gly Gly Ile
130          135          140
Thr Tyr Leu Ala Thr Phe Gly Ala Ile Arg Pro Ile Leu Phe Val Asn
145          150          155          160
Lys Met Leu Ala Lys Pro Phe Leu Ser Ser Gln Thr Lys Ala Asn Met
165          170          175
Gly Ser Ser Val Ser Tyr Ile Met Ala Ala Asn His Ala Ala Ser Val
180          185          190
Val Gly Ala Gly Leu Ala Ile Ser Ala Glu Arg Ala Asp Cys Glu Ala
195          200          205
Arg Cys Ala Arg Ile Ala Arg Glu Glu Ser Leu Leu Glu Val Pro Gly
210          215          220
Glu Glu Asn Ala Cys Glu Lys Lys Val Ala Gly Glu Lys Ala Lys Thr
225          230          235          240
Phe Thr Arg Ile Lys Tyr Ala Leu Leu Thr Met Leu Glu Lys Phe Leu
245          250          255
Glu Cys Val Ala Asp Val Phe Lys Leu Val Pro Leu Pro Ile Thr Met
260          265          270
Gly Ile Arg Ala Ile Val Ala Ala Gly Cys Thr Phe Thr Ser Ala Ile
275          280          285
Ile Gly Leu Cys Thr Phe Cys Ala Arg Ala
290          295

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<210> 128
 <211> 897
 <212> DNA
 <213> Chlamydia

<400> 128
 atggccttcta tatgtggacg tttaggggtct ggtacagggga atgctctaaa agcttttttt 60
 acacagccca gcaataaaaat ggcaagggtta gtaaataaga cgaagggaat ggataagact 120
 gttaaggtcg ccaagtctgc tgccgaattg accgcaaata ttttggaaca agctggaggc 180
 gcgggctctt ccgcacacat tacagcttcc caagtgtcca aaggattagg ggatacgaga 240
 actgttgctg ctttagggaa tgcctttaac ggagcgttgc caggaacagt tcaaagtgcg 300
 caaagcttct tctctcacat gaaagctgct agtcagaaaa cgcaagaagg ggatgagggg 360
 ctcacagcag atctttgtgt gtctcataag cgcagagcgg ctgctggctgt ctgtggcttc 420
 atcggaggaa ttacctacct cgcgacattc ggagttatcc gtccgattct gtttgtcaac 480
 aaaatgctgg tgaacccggt tctttcttcc caaactaaag caaatatggg atcttctgtt 540
 agctatatta tggcggctaa ccatgcagcg tctgtggtgg gtgctggact cgctatcagt 600
 gcggaaagag cagattgcga agcccgtgc gctcgtattg cgagagaaga gtcgttactc 660
 gaagtgtcgg gagaggaaaa tgcttgcgag aagagagtcg ctggagagaa agccaagacg 720
 ttcacgcgca tcaagtatgc actcctcact atgctcgaga agtttttgga atgcgttgcc 780
 gacgttttca aattggtgcc gctgcctatt acaatgggta ttcgtgcgat tgtggctgct 840
 ggatgtacgt tcacttctgc aattattgga ttgtgcactt tctgcgccag agcataa 897

<210> 129
 <211> 298
 <212> PRT
 <213> Chlamydia

<400> 129
 Met Ala Ser Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu
 1 5 10 15
 Lys Ala Phe Phe Thr Gln Pro Ser Asn Lys Met Ala Arg Val Val Asn
 20 25 30
 Lys Thr Lys Gly Met Asp Lys Thr Val Lys Val Ala Lys Ser Ala Ala
 35 40 45
 Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser
 50 55 60
 Ala His Ile Thr Ala Ser Gln Val Ser Lys Gly Leu Gly Asp Thr Arg
 65 70 75 80
 Thr Val Val Ala Leu Gly Asn Ala Phe Asn Gly Ala Leu Pro Gly Thr
 85 90 95
 Val Gln Ser Ala Gln Ser Phe Phe Ser His Met Lys Ala Ala Ser Gln
 100 105 110
 Lys Thr Gln Glu Gly Asp Glu Gly Leu Thr Ala Asp Leu Cys Val Ser
 115 120 125
 His Lys Arg Arg Ala Ala Ala Val Cys Gly Phe Ile Gly Gly Ile
 130 135 140
 Thr Tyr Leu Ala Thr Phe Gly Val Ile Arg Pro Ile Leu Phe Val Asn
 145 150 155 160
 Lys Met Leu Val Asn Pro Phe Leu Ser Ser Gln Thr Lys Ala Asn Met
 165 170 175
 Gly Ser Ser Val Ser Tyr Ile Met Ala Ala Asn His Ala Ala Ser Val
 180 185 190
 Val Gly Ala Gly Leu Ala Ile Ser Ala Glu Arg Ala Asp Cys Glu Ala
 195 200 205
 Arg Cys Ala Arg Ile Ala Arg Glu Glu Ser Leu Leu Glu Val Ser Gly
 210 215 220
 Glu Glu Asn Ala Cys Glu Lys Arg Val Ala Gly Glu Lys Ala Lys Thr


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<210> 132
<211> 897
<212> DNA
<213> Chlamydia
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<210>	133
<211>	298
<212>	PRT
<213>	Chlamydia

<div> <div><400> 133</div> <div>Met Ala Ala Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu</div> <div>1 5 10 15</div> </div>															
<div> <div>Lys Ala Phe Phe Thr Gln Pro Ser Asn Lys Met Ala Arg Val Val Asn</div> <div>20 25 30</div> </div>															
<div> <div>Lys Thr Lys Gly Met Asp Lys Thr Val Lys Val Ala Lys Ser Ala Ala</div> <div>35 40 45</div> </div>															
<div> <div>Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser</div> <div>50 55 60</div> </div>															
<div> <div>Ala His Ile Thr Ala Ser Gln Val Ser Lys Gly Leu Gly Asp Ala Arg</div> </div>															

65 70 75 80
 Thr Val Leu Ala Leu Gly Asn Ala Phe Asn Gly Ala Leu Pro Gly Thr
 85 90 95
 Val Gln Ser Ala Gln Ser Phe Phe Ser Tyr Met Lys Ala Ala Ser Gln
 100 105 110
 Lys Pro Gln Glu Gly Asp Glu Gly Leu Val Ala Asp Leu Cys Val Ser
 115 120 125
 His Lys Arg Arg Ala Ala Ala Ala Val Cys Ser Phe Ile Gly Gly Ile
 130 135 140
 Thr Tyr Leu Ala Thr Phe Gly Ala Ile Arg Pro Ile Leu Phe Val Asn
 145 150 155 160
 Lys Met Leu Ala Gln Pro Phe Leu Ser Ser Gln Thr Lys Ala Asn Met
 165 170 175
 Gly Ser Ser Val Ser Tyr Ile Met Ala Ala Asn His Ala Ala Phe Val
 180 185 190
 Val Gly Ser Gly Leu Ala Ile Ser Ala Glu Arg Ala Asp Cys Glu Ala
 195 200 205
 Arg Cys Ala Arg Ile Ala Arg Glu Glu Ser Ser Leu Glu Leu Ser Gly
 210 215 220
 Glu Glu Asn Ala Cys Glu Arg Arg Val Ala Gly Glu Lys Ala Lys Thr
 225 230 235 240
 Phe Thr Arg Ile Lys Tyr Ala Leu Leu Thr Met Leu Glu Lys Phe Leu
 245 250 255
 Glu Cys Val Ala Asp Val Phe Lys Leu Val Pro Leu Pro Ile Thr Met
 260 265 270
 Gly Ile Arg Ala Ile Val Ala Ala Gly Cys Thr Phe Thr Ser Ala Val
 275 280 285
 Ile Gly Leu Trp Thr Phe Cys Asn Arg Val
 290 295

<210> 134
 <211> 897
 <212> DNA
 <213> Chlamydia

<400> 134
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 attaaaggtg ccaagtctgc tgccgaattg accgcaaata ttttggaaca agctggaggc 180
 gcgggtctct ccgcacacat tacagcttcc caagtgtcca aaggattagg ggatgcgaga 240
 actgttgctg ctttagggaa tgctttaaac ggagcgttgc caggaacagt tcaaagtgcg 300
 caaagcttct tctctcatat gaaagctgct agtcagaaaa cgcaagaagg ggatgagggg 360
 ctcacagcag atctttgtgt gtctcataag cgcagagcgg ctgcggctgt ctgtagcatc 420
 atcggaggaa ttacctacct cgcgacattc ggagctatcc gtccgattct gtttgtcaac 480
 aaaatgctgg caaaaccgtt tctttcttcc caaactaaag caaatatggg atcttctgtt 540
 agctatatta tggcggctaa ccattgcagc tctgtggtgg gtgctggact cgctatcagt 600
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 gaaatgccgg gagaggaaaa tgcttgcgag aagaaagtgc ctggagagaa agccaagacg 720
 ttcacgcgca tcaagtatgc actcctcact atgctcgaga agtttttgga atgcgttgcc 780
 gacgttttca aattggtgcc gctgcctatt acaatgggta ttcgtgcgat tgtggctgct 840
 ggatgtacgt tcacttctgc aattattgga ttgtgcactt tctgcgccag agcataa 897

<210> 135
 <211> 298
 <212> PRT
 <213> Chlamydia

<400> 135
 Met Ala Ser Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu
 1 5 10 15
 Lys Ala Phe Phe Thr Gln Pro Asn Asn Lys Met Ala Arg Val Val Asn
 20 25 30
 Lys Thr Lys Gly Met Asp Lys Thr Ile Lys Val Ala Lys Ser Ala Ala
 35 40 45
 Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser
 50 55 60
 Ala His Ile Thr Ala Ser Gln Val Ser Lys Gly Leu Gly Asp Ala Arg
 65 70 75 80
 Thr Val Val Ala Leu Gly Asn Ala Phe Asn Gly Ala Leu Pro Gly Thr
 85 90 95
 Val Gln Ser Ala Gln Ser Phe Phe Ser His Met Lys Ala Ala Ser Gln
 100 105 110
 Lys Thr Gln Glu Gly Asp Glu Gly Leu Thr Ala Asp Leu Cys Val Ser
 115 120 125
 His Lys Arg Arg Ala Ala Ala Val Cys Ser Ile Ile Gly Gly Ile
 130 135 140
 Thr Tyr Leu Ala Thr Phe Gly Ala Ile Arg Pro Ile Leu Phe Val Asn
 145 150 155 160
 Lys Met Leu Ala Lys Pro Phe Leu Ser Ser Gln Thr Lys Ala Asn Met
 165 170 175
 Gly Ser Ser Val Ser Tyr Ile Met Ala Ala Asn His Ala Ala Ser Val
 180 185 190
 Val Gly Ala Gly Leu Ala Ile Ser Ala Glu Arg Ala Asp Cys Glu Ala
 195 200 205
 Arg Cys Ala Arg Ile Ala Arg Glu Glu Ser Leu Leu Glu Met Pro Gly
 210 215 220
 Glu Glu Asn Ala Cys Glu Lys Lys Val Ala Gly Glu Lys Ala Lys Thr
 225 230 235 240
 Phe Thr Arg Ile Lys Tyr Ala Leu Leu Thr Met Leu Glu Lys Phe Leu
 245 250 255
 Glu Cys Val Ala Asp Val Phe Lys Leu Val Pro Leu Pro Ile Thr Met
 260 265 270
 Gly Ile Arg Ala Ile Val Ala Ala Gly Cys Thr Phe Thr Ser Ala Ile
 275 280 285
 Ile Gly Leu Cys Thr Phe Cys Ala Arg Ala
 290 295

<210> 136

<211> 882

<212> DNA

<213> Chlamydia

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 ataaaggttg ggaagtctgc tgctgaatta acggcgagta ttttagagca aactgggggg 180
 gcagggactg atgcacatgt tacggcggcc aaggtgtcta aagcacttgg ggacgcgcga 240
 acagtaatgg ctctagggaa tgtcttcaat ggggtctgtgc cagcaaccat tcaaagtgcg 300
 cgaagctgtc tcgcccattt acgagcggcc ggcaaagaag aagaaacatg ctccaaggtg 360
 aaagatctct gtgtttctca tagacgaaga gctgcggctg aggcttgtaa tgttattgga 420
 ggagcaactt atattacaac tttcggagcg attcgccga cattactcgt taacaagctt 480
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 atcatggcag cgaaccatgc ggcactctgt cttgggtctg ctttaagtat tagcgcagaa 600
 agagcagact gtgaagagcg gtgtgatcgc attcgatgta gtgaggatgg tgaaatttgc 660


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gaaggcaata aattaacagc tatttcggaa gagaaggcta gatcatggac tctcattaag 720
tacagattcc ttactatgat agaaaaacta tttgagatgg tggcggatat cttcaagtta 780
attcctttgc caatttcgca tggaattcgt gctattgttg ctgcgggatg tacgttgact 840
tctgcagtta ttggcttagg tacttttttg tctagagcat aa 882

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<210> 137
 <211> 293
 <212> PRT
 <213> Chlamydia

<400> 137

Met	Ala	Ser	Val	Cys	Gly	Arg	Leu	Ser	Ala	Gly	Val	Gly	Asn	Arg	Phe
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			20					25					30		
Ser	Ala	Lys	Gly	Leu	Asp	Arg	Ser	Ile	Lys	Val	Gly	Lys	Ser	Ala	Ala
		35					40					45			
Glu	Leu	Thr	Ala	Ser	Ile	Leu	Glu	Gln	Thr	Gly	Gly	Ala	Gly	Thr	Asp
		50				55					60				
Ala	His	Val	Thr	Ala	Ala	Lys	Val	Ser	Lys	Ala	Leu	Gly	Asp	Ala	Arg
65					70					75					80
Thr	Val	Met	Ala	Leu	Gly	Asn	Val	Phe	Asn	Gly	Ser	Val	Pro	Ala	Thr
				85					90					95	
Ile	Gln	Ser	Ala	Arg	Ser	Cys	Leu	Ala	His	Leu	Arg	Ala	Ala	Gly	Lys
			100					105						110	
Glu	Glu	Glu	Thr	Cys	Ser	Lys	Val	Lys	Asp	Leu	Cys	Val	Ser	His	Arg
			115				120					125			
Arg	Arg	Ala	Ala	Ala	Glu	Ala	Cys	Asn	Val	Ile	Gly	Gly	Ala	Thr	Tyr
					135						140				
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225					230						235				240
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<400> 161
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<212> DNA

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<210> 175
<211> 880
<212> PRT
<213> Chlamydia

<220>
<221> VARIANT
<222> (1)...(880)
<223> Xaa = Any Amino Acid
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Thr	Ala	Leu	Leu	Thr	Lys	Asn	Pro	Asn	His	Val	Val	Cys	Thr	Phe	Phe	
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Glu	Asp	Cys	Thr	Met	Glu	Ser	Leu	Phe	Pro	Ala	Leu	Cys	Ala	His	Ala	
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Ser	Gln	Asp	Asp	Pro	Leu	Tyr	Val	Leu	Gly	Asn	Ser	Tyr	Cys	Trp	Phe	
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Val	Ser	Lys	Leu	His	Ile	Thr	Asp	Pro	Lys	Glu	Ala	Leu	Phe	Lys	Glu	
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Lys	Gly	Asp	Leu	Ser	Ile	Gln	Asn	Phe	Arg	Phe	Leu	Ser	Phe	Thr	Asp	
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Cys	Ser	Ser	Lys	Glu	Ser	Ser	Pro	Ser	Ile	Ile	His	Gln	Lys	Asn	Gly	
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Gln	Leu	Ser	Leu	Arg	Asn	Asn	Gly	Ser	Met	Ser	Phe	Cys	Arg	Asn	His	
			130			135					140					
Ala	Glu	Gly	Ser	Gly	Gly	Ala	Ile	Ser	Ala	Asp	Ala	Phe	Ser	Leu	Gln	
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His	Asn	Tyr	Leu	Phe	Thr	Ala	Phe	Glu	Glu	Asn	Ser	Ser	Lys	Gly	Asn	
				165					170					175		
Gly	Gly	Ala	Ile	Gln	Ala	Gln	Thr	Phe	Ser	Leu	Ser	Arg	Asn	Val	Ser	
			180					185					190			
Pro	Ile	Ser	Phe	Ala	Arg	Asn	Arg	Ala	Asp	Leu	Asn	Gly	Gly	Ala	Ile	
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Cys	Cys	Ser	Asn	Leu	Ile	Cys	Ser	Gly	Asn	Val	Asn	Pro	Leu	Phe	Phe	
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Thr	Gly	Asn	Ser	Ala	Thr	Asn	Gly	Gly	Ala	Ile	Cys	Cys	Ile	Ser	Asp	
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Leu	Asn	Thr	Ser	Glu	Lys	Gly	Ser	Leu	Ser	Leu	Ala	Cys	Asn	Gln	Glu	
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Thr	Leu	Phe	Ala	Ser	Asn	Ser	Ala	Lys	Glu	Lys	Gly	Gly	Ala	Ile	Tyr	
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Asn	Ser	Ala	Lys	Ile	Gly	Gly	Ala	Ile	Ala	Ile	Gln	Ser	Gly	Gly	Ser	

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Leu 305	Ser	Ile	Leu	Ala	Gly 310	Glu	Gly	Ser	Val	Leu 315	Phe	Gln	Asn	Asn	Ser 320
Gln	Arg	Thr	Ser	Asp 325	Gln	Gly	Leu	Val	Arg 330	Asn	Ala	Ile	Tyr	Leu 335	Xaa
Lys	Asp	Ala	Ile 340	Leu	Ser	Ser	Leu	Glu	Ala 345	Arg	Asn	Gly	Asp 350	Ile	Leu
Phe	Phe	Asp 355	Pro	Ile	Val	Gln	Glu	Ser	Ser	Ser	Lys	Glu 365	Ser	Pro	Leu
Pro	Ser	Ser 370	Leu	Gln	Ala	Ser 375	Val	Thr	Ser	Pro	Thr 380	Pro	Ala	Thr	Ala
Ser 385	Pro	Leu	Val	Ile	Gln 390	Thr	Ser	Ala	Asn 395	Arg	Ser	Val	Ile	Phe	Ser 400
Ser	Glu	Arg	Leu	Ser 405	Glu	Glu	Glu	Lys	Thr 410	Pro	Asp	Asn	Leu	Thr 415	Ser
Gln	Leu	Gln	Gln 420	Pro	Ile	Glu	Leu	Lys 425	Ser	Gly	Arg	Leu	Val 430	Leu	Lys
Asp	Arg	Ala 435	Val	Leu	Ser	Ala	Pro 440	Ser	Leu	Ser	Gln	Asp 445	Pro	Gln	Ala
Leu	Leu 450	Ile	Met	Glu	Ala	Gly 455	Thr	Ser	Leu	Lys	Thr 460	Ser	Ser	Asp	Leu
Lys 465	Leu	Ala	Thr	Leu	Ser 470	Ile	Pro	Leu	His 475	Ser	Leu	Asp	Thr	Glu	Lys 480
Ser	Val	Thr	Ile	His 485	Ala	Pro	Asn	Leu	Ser 490	Ile	Gln	Lys	Ile	Phe 495	Leu
Ser	Asn	Ser	Gly 500	Asp	Glu	Asn	Phe	Tyr 505	Glu	Asn	Val	Glu	Leu 510	Leu	Ser
Lys	Glu	Gln 515	Asn	Asn	Ile	Pro	Leu 520	Leu	Thr	Leu	Pro	Lys 525	Glu	Gln	Ser
His	Leu 530	His	Leu	Pro	Asp 535	Gly	Asn	Leu	Ser	Ser	His 540	Phe	Gly	Tyr	Gln
Gly 545	Asp	Trp	Thr	Phe	Ser 550	Trp	Lys	Asp	Ser	Asp 555	Glu	Gly	His	Ser	Leu 560
Ile	Ala	Asn	Trp	Thr 565	Pro	Lys	Asn	Tyr	Val 570	Pro	His	Pro	Glu	Arg 575	Gln
Ser	Thr	Leu	Val 580	Ala	Asn	Thr	Leu	Trp 585	Asn	Thr	Tyr	Ser	Asp 590	Met	Gln
Ala	Val	Gln 595	Ser	Met	Ile	Asn	Thr 600	Thr	Ala	His	Gly	Gly 605	Ala	Tyr	Leu
Phe	Gly 610	Thr	Trp	Gly	Ser	Ala 615	Val	Ser	Asn	Leu	Phe 620	Tyr	Val	His	Asp
Ser 625	Ser	Gly	Lys	Pro	Ile 630	Asp	Asn	Trp	His	His 635	Arg	Ser	Leu	Gly	Tyr 640
Leu	Phe	Gly	Ile	Ser 645	Thr	His	Ser	Leu	Asp 650	Asp	His	Ser	Phe	Cys 655	Leu
Ala	Ala	Gly	Gln 660	Leu	Leu	Gly	Lys	Ser 665	Ser	Asp	Ser	Phe	Ile 670	Thr	Ser
Thr	Glu	Thr 675	Thr	Ser	Tyr	Ile	Ala 680	Thr	Val	Gln	Ala	Gln 685	Leu	Ala	Thr
Ser	Leu 690	Met	Lys	Ile	Ser	Ala 695	Gln	Ala	Cys	Tyr	Asn 700	Glu	Ser	Ile	His
Glu 705	Leu	Lys	Thr	Lys	Tyr 710	Arg	Ser	Phe	Ser	Lys 715	Glu	Gly	Phe	Gly	Ser 720
Trp	His	Ser	Val	Ala 725	Val	Ser	Gly	Glu	Val 730	Cys	Ala	Ser	Ile	Pro 735	Ile
Val	Ser	Asn	Gly 740	Ser	Gly	Leu	Phe	Ser 745	Ser	Phe	Ser	Ile	Phe 750	Ser	Lys

Leu Gln Gly Phe Ser Gly Thr Gln Asp Gly Phe Glu Glu Ser Ser Gly
 755 760 765
 Glu Ile Arg Ser Phe Ser Ala Ser Ser Phe Arg Asn Ile Ser Leu Pro
 770 775 780
 Ile Gly Ile Thr Phe Glu Lys Lys Ser Gln Lys Thr Arg Thr Tyr Tyr
 785 790 795 800
 Tyr Phe Leu Gly Ala Tyr Ile Gln Asp Leu Lys Arg Asp Val Glu Ser
 805 810 815
 Gly Pro Val Val Leu Leu Lys Asn Ala Val Ser Trp Asp Ala Pro Met
 820 825 830
 Ala Asn Leu Asp Ser Arg Ala Tyr Met Phe Arg Leu Thr Asn Gln Arg
 835 840 845
 Ala Leu His Arg Leu Gln Thr Leu Leu Asn Val Ser Cys Val Leu Arg
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<210> 176

<211> 982

<212> PRT

<213> Chlamydia

<220>

<221> VARIANT

<222> (1)...(982)

<223> Xaa = Any Amino Acid

<400> 176

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 35 40 45
 Leu Ser Cys Phe Gly Asn Leu Leu Gly Ser Phe Thr Val Leu Gly Arg
 50 55 60
 Gly His Ser Leu Thr Phe Glu Asn Ile Arg Thr Ser Thr Asn Gly Ala
 65 70 75 80
 Ala Leu Ser Asn Ser Ala Ala Asp Gly Leu Phe Thr Ile Glu Gly Phe
 85 90 95
 Lys Glu Leu Ser Phe Ser Asn Cys Asn Ser Leu Leu Ala Val Leu Pro
 100 105 110
 Ala Ala Thr Thr Asn Lys Gly Ser Gln Thr Pro Thr Thr Ser Thr
 115 120 125
 Pro Ser Asn Gly Thr Ile Tyr Ser Lys Thr Asp Leu Leu Leu Leu Asn
 130 135 140
 Asn Glu Lys Phe Ser Phe Tyr Ser Asn Leu Val Ser Gly Asp Gly Gly
 145 150 155 160
 Ala Ile Asp Ala Lys Ser Leu Thr Val Gln Gly Ile Ser Lys Leu Cys
 165 170 175
 Val Phe Gln Glu Asn Thr Ala Gln Ala Asp Gly Gly Ala Cys Gln Val
 180 185 190
 Val Thr Ser Phe Ser Ala Met Ala Asn Glu Ala Pro Ile Ala Phe Val
 195 200 205
 Ala Asn Val Ala Gly Val Arg Gly Gly Gly Ile Ala Ala Val Gln Asp
 210 215 220
 Gly Gln Gln Gly Val Ser Ser Ser Thr Ser Thr Glu Asp Pro Val Val

225					230				235				240			
Ser	Phe	Ser	Arg	Asn	Thr	Ala	Val	Glu	Phe	Asp	Gly	Asn	Val	Ala	Arg	
				245					250					255		
Val	Gly	Gly	Gly	Ile	Tyr	Ser	Tyr	Gly	Asn	Val	Ala	Phe	Leu	Asn	Asn	
			260					265					270			
Gly	Lys	Thr	Leu	Phe	Leu	Asn	Asn	Val	Ala	Ser	Pro	Val	Tyr	Ile	Ala	
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Ala	Lys	Gln	Pro	Thr	Ser	Gly	Gln	Ala	Ser	Asn	Thr	Ser	Asn	Asn	Tyr	
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Gly	Asp	Gly	Gly	Ala	Ile	Phe	Cys	Lys	Asn	Gly	Ala	Gln	Ala	Gly	Ser	
305					310					315					320	
Asn	Asn	Ser	Gly	Ser	Val	Ser	Phe	Asp	Gly	Glu	Gly	Val	Val	Phe	Phe	
				325					330					335		
Ser	Ser	Asn	Val	Ala	Ala	Gly	Lys	Gly	Gly	Ala	Ile	Tyr	Ala	Lys	Lys	
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Leu	Ser	Val	Ala	Asn	Cys	Gly	Pro	Val	Gln	Phe	Leu	Arg	Asn	Ile	Ala	
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Asn	Asp	Gly	Gly	Ala	Ile	Tyr	Leu	Gly	Glu	Ser	Gly	Glu	Leu	Ser	Leu	
	370					375					380					
Ser	Ala	Asp	Tyr	Gly	Asp	Ile	Ile	Phe	Asp	Gly	Asn	Leu	Lys	Arg	Thr	
385					390					395					400	
Ala	Lys	Glu	Asn	Ala	Ala	Asp	Val	Asn	Gly	Val	Thr	Val	Ser	Ser	Gln	
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Ala	Ile	Ser	Met	Gly	Ser	Gly	Gly	Lys	Ile	Thr	Thr	Leu	Arg	Ala	Lys	
			420					425					430			
Ala	Gly	His	Gln	Ile	Leu	Phe	Asn	Asp	Pro	Ile	Glu	Met	Ala	Asn	Gly	
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	450					455					460					
Glu	Gly	Tyr	Thr	Gly	Asp	Ile	Val	Phe	Ala	Asn	Gly	Ser	Ser	Thr	Leu	
465					470				475						480	
Tyr	Gln	Asn	Val	Thr	Ile	Glu	Gln	Gly	Arg	Ile	Val	Leu	Arg	Glu	Lys	
			485						490					495		
Ala	Lys	Leu	Ser	Val	Asn	Ser	Leu	Ser	Gln	Thr	Gly	Gly	Ser	Leu	Tyr	
			500					505					510			
Met	Glu	Ala	Gly	Ser	Thr	Leu	Asp	Phe	Val	Thr	Pro	Gln	Pro	Pro	Gln	
	515						520					525				
Gln	Pro	Pro	Ala	Ala	Asn	Gln	Leu	Ile	Thr	Leu	Ser	Asn	Leu	His	Leu	
	530				535						540					
Ser	Leu	Ser	Ser	Leu	Leu	Ala	Asn	Asn	Ala	Val	Thr	Asn	Pro	Pro	Thr	
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Asn	Pro	Pro	Ala	Gln	Asp	Ser	His	Pro	Ala	Val	Ile	Gly	Ser	Thr	Thr	
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Ala	Gly	Ser	Val	Thr	Ile	Ser	Gly	Pro	Ile	Phe	Phe	Glu	Asp	Leu	Asp	
			580													

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Tyr Cys Arg Gly Leu Trp Val Ser Gly Val Ser Asn Phe Phe Tyr His
705          710          715          720
Asp Arg Asp Ala Leu Gly Gln Gly Tyr Arg Tyr Ile Ser Gly Gly Tyr
          725          730          735
Ser Leu Gly Ala Asn Ser Tyr Phe Gly Ser Ser Met Phe Gly Leu Ala
          740          745          750
Phe Thr Glu Val Phe Gly Arg Ser Lys Asp Tyr Val Val Cys Arg Ser
          755          760          765
Asn His His Ala Cys Ile Gly Ser Val Tyr Leu Ser Thr Gln Gln Ala
770          775          780
Leu Cys Gly Ser Tyr Leu Phe Gly Asp Ala Phe Ile Arg Ala Ser Tyr
785          790          795          800
Gly Phe Gly Asn Gln His Met Lys Thr Ser Tyr Thr Phe Ala Glu Glu
          805          810          815
Ser Asp Val Arg Trp Asp Asn Asn Cys Leu Ala Gly Glu Ile Gly Ala
          820          825          830
Gly Leu Pro Ile Val Ile Thr Pro Ser Lys Leu Tyr Leu Asn Glu Leu
          835          840          845
Arg Pro Phe Val Gln Ala Glu Phe Ser Tyr Ala Asp His Glu Ser Phe
850          855          860
Thr Glu Glu Gly Asp Gln Ala Arg Ala Phe Lys Ser Gly His Leu Leu
865          870          875          880
Asn Leu Ser Val Pro Val Gly Val Lys Phe Asp Arg Cys Ser Ser Thr
          885          890          895
His Pro Asn Lys Tyr Ser Phe Met Ala Ala Tyr Ile Cys Asp Ala Tyr
          900          905          910
Arg Thr Ile Ser Gly Thr Glu Thr Thr Leu Leu Ser His Gln Glu Thr
915          920          925
Trp Thr Thr Asp Ala Phe His Leu Ala Arg His Gly Val Val Val Arg
930          935          940
Gly Ser Met Tyr Ala Ser Leu Thr Ser Asn Ile Glu Val Tyr Gly His
945          950          955          960
Gly Arg Tyr Glu Tyr Arg Asp Ala Ser Arg Gly Tyr Gly Leu Ser Ala
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Gly Ser Lys Val Xaa Phe
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<210> 177
 <211> 964
 <212> PRT
 <213> Chlamydia

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<400> 177
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Pro Asp Pro Thr Lys Glu Ser Leu Ser Asn Lys Ile Ser Leu Thr Gly
          35          40          45
Asp Thr His Asn Leu Thr Asn Cys Tyr Leu Asp Asn Leu Arg Tyr Ile
          50          55          60
Leu Ala Ile Leu Gln Lys Thr Pro Asn Glu Gly Ala Ala Val Thr Ile
65          70          75          80
Thr Asp Tyr Leu Ser Phe Phe Asp Thr Gln Lys Glu Gly Ile Tyr Phe
          85          90          95

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Pro	Asn	Ser	Pro	Thr	Val	Glu	Ile	Arg	Asp	Thr	Ile	Gly	Pro	Val	Ile
		115					120					125			
Phe	Glu	Asn	Asn	Thr	Cys	Cys	Arg	Leu	Phe	Thr	Trp	Arg	Asn	Pro	Tyr
	130					135					140				
Ala	Ala	Asp	Lys	Ile	Arg	Glu	Gly	Gly	Ala	Ile	His	Ala	Gln	Asn	Leu
145					150					155					160
Tyr	Ile	Asn	His	Asn	His	Asp	Val	Val	Gly	Phe	Met	Lys	Asn	Phe	Ser
			165						170					175	
Tyr	Val	Gln	Gly	Gly	Ala	Ile	Ser	Thr	Ala	Asn	Thr	Phe	Val	Val	Ser
			180					185					190		
Glu	Asn	Gln	Ser	Cys	Phe	Leu	Phe	Met	Asp	Asn	Ile	Cys	Ile	Gln	Thr
		195					200					205			
Asn	Thr	Ala	Gly	Lys	Gly	Gly	Ala	Ile	Tyr	Ala	Gly	Thr	Ser	Asn	Ser
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Ala	Gly	Gly	Ala	Ile	Phe	Ser	Pro	Ile	Cys	Ser	Leu	Thr	Gly	Asn	Arg
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Gly	Asn	Ile	Val	Phe	Tyr	Asn	Asn	Arg	Cys	Phe	Lys	Asn	Val	Glu	Thr
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Ala	Ser	Ser	Glu	Ala	Ser	Asp	Gly	Gly	Ala	Ile	Lys	Val	Thr	Thr	Arg
		275					280					285			
Leu	Asp	Val	Thr	Gly	Asn	Arg	Gly	Arg	Ile	Phe	Phe	Ser	Asp	Asn	Ile
	290					295					300				
Thr	Lys	Asn	Tyr	Gly	Gly	Ala	Ile	Tyr	Ala	Pro	Val	Val	Thr	Leu	Val
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Asp	Asn	Gly	Pro	Thr	Tyr	Phe	Ile	Asn	Asn	Ile	Ala	Asn	Asn	Lys	Gly
				325					330					335	
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			340					345					350		
Arg	His	Ala	Ile	Ile	Phe	Asn	Glu	Asn	Ile	Val	Thr	Asn	Val	Thr	Asn
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Ala	Asn	Gly	Thr	Ser	Thr	Ser	Ala	Asn	Pro	Pro	Arg	Arg	Asn	Ala	Ile
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Thr	Val	Ala	Ser	Ser	Ser	Gly	Glu	Ile	Leu	Leu	Gly	Ala	Gly	Ser	Ser
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Gln	Asn	Leu	Ile	Phe	Tyr	Asp	Pro	Ile	Glu	Val	Ser	Asn	Ala	Gly	Val
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Thr	Lys	Thr	Pro	Ala	Pro	Leu	Thr	Leu	Ser	Asn	Gly	Phe	Leu	Cys	Ile
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Thr	Gly	Asp	Ser	Ala	Ser	Asn	Ala	Ser	Ile	Thr	Leu	Lys	His	Ile	Gly
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Leu	Asn	Leu	Ser	Ser	Ile	Leu	Lys	Ser	Gly	Ala	Glu	Ile	Pro	Leu	Leu
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Trp	Val	Glu	Pro	Thr	Asn	Asn	Ser	Asn	Asn	Tyr	Thr	Ala	Asp	Thr	Ala
	530					535					540				
Ala	Thr	Phe	Ser	Leu	Ser	Asp	Val	Lys	Leu	Ser	Leu	Ile	Asp	Asp	Tyr

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 Gly Asn Ser Pro Tyr Glu Ser Thr Asp Leu Thr His Ala Leu Ser Ser
 565 570 575
 Gln Pro Met Leu Ser Ile Ser Glu Ala Ser Asp Asn Gln Leu Gln Ser
 580 585 590
 Glu Asn Ile Asp Phe Ser Gly Leu Asn Val Pro His Tyr Gly Trp Gln
 595 600 605
 Gly Leu Trp Thr Trp Gly Trp Ala Lys Thr Gln Asp Pro Glu Pro Ala
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 Ser Ser Ala Thr Ile Thr Asp Pro Gln Lys Ala Asn Arg Phe His Arg
 625 630 635 640
 Thr Leu Leu Leu Thr Trp Leu Pro Ala Gly Tyr Val Pro Ser Pro Lys
 645 650 655
 His Arg Ser Pro Leu Ile Ala Asn Thr Leu Trp Gly Asn Met Leu Leu
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 Ala Thr Glu Ser Leu Lys Asn Ser Ala Glu Leu Thr Pro Ser Gly His
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 Pro Phe Trp Gly Ile Thr Gly Gly Gly Leu Gly Met Met Val Tyr Gln
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 Asp Pro Arg Glu Asn His Pro Gly Phe His Met Arg Ser Ser Gly Tyr
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 Ser Ala Gly Met Ile Ala Gly Gln Thr His Thr Phe Ser Leu Lys Phe
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 740 745 750
 Ser Ser Lys Asn Tyr Ser Cys Gln Gly Glu Met Leu Phe Ser Leu Gln
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 Glu Gly Phe Leu Leu Thr Lys Leu Val Gly Leu Tyr Ser Tyr Gly Asp
 770 775 780
 His Asn Cys His His Phe Tyr Thr Gln Gly Glu Asn Leu Thr Ser Gln
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 Pro Met Lys Pro Phe Gly Ser Thr His Ile Leu Thr Ala Pro Phe Leu
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 Gly Ala Leu Gly Ile Tyr Ser Ser Leu Ser His Phe Thr Glu Val Gly
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 Ala Tyr Pro Arg Ser Phe Ser Thr Lys Thr Pro Leu Ile Asn Val Leu
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 Val Pro Ile Gly Val Lys Gly Ser Phe Met Asn Ala Thr His Arg Pro
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 Glu Pro Gly Ile Ala Thr Gln Leu Leu Ala Ser Lys Gly Ile Trp Phe
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 Gly Ser Gly Ser Pro Ser Ser Arg His Ala Met Ser Tyr Lys Ile Ser
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 Gln Gln Thr Gln Pro Leu Ser Trp Leu Thr Leu His Phe Gln Tyr His
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 Ala Leu Arg Phe

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Val	Asp	Leu	His	Ala	Gly	Gly	Gln	Ser 40	Val	Asn	Glu	Leu	Val	Tyr	Val
Gly	Pro 50	Gln	Ala	Val	Leu	Leu	Leu	Asp	Gln	Ile	Arg 60	Asp	Leu	Phe	Val
Gly 65	Ser	Lys	Asp	Ser	Gln	Ala	Glu	Gly	Gln	Tyr 75	Arg	Leu	Ile	Val	Gly
Asp	Pro	Ser	Ser	Phe 85	Gln	Glu	Lys	Asp	Ala 90	Asp	Thr	Leu	Pro	Gly	Lys
Val	Glu	Gln	Ser	Thr 100	Leu	Phe	Ser	Val	Thr 105	Asn	Pro	Val	Val	Phe	Gln
Gly	Val	Asp	Gln	Gln	Asp	Gln	Val	Ser 120	Ser	Gln	Gly	Leu	Ile	Cys	Ser
Phe	Thr 130	Ser	Ser	Asn	Leu	Asp	Ser	Pro	Arg	Asp	Gly 140	Glu	Ser	Phe	Leu
Gly 145	Ile	Ala	Phe	Val	Gly	Asp	Ser	Ser	Lys	Ala 155	Gly	Ile	Thr	Leu	Thr
Asp	Val	Lys	Ala	Ser 165	Leu	Ser	Gly	Ala	Ala 170	Leu	Tyr	Ser	Thr	Glu	Asp
Leu	Ile	Phe	Glu	Lys 180	Ile	Lys	Gly	Gly	Leu 185	Glu	Phe	Ala	Ser	Cys	Ser
Ser	Leu	Glu	Gln	Gly 195	Gly	Ala	Cys	Ala	Ala 200	Gln	Ser	Ile	Leu	Ile	His
Asp	Cys 210	Gln	Gly	Leu	Gln	Val	Lys	His	Cys	Thr	Thr 220	Ala	Val	Asn	Ala
Glu 225	Gly	Ser	Ser	Ala	Asn	Asp	His	Leu	Gly	Phe 235	Gly	Gly	Gly	Ala	Phe
Phe	Val	Thr	Gly	Ser 245	Leu	Ser	Gly	Glu	Lys 250	Ser	Leu	Tyr	Met	Pro	Ala
Gly	Asp	Met	Val	Val 260	Ala	Asn	Cys	Asp	Gly 265	Ala	Ile	Ser	Phe	Glu	Gly
Asn	Ser	Ala	Asn	Phe 275	Ala	Asn	Gly	Gly	Ala 280	Ile	Ala	Ala	Ser	Gly	Lys
Val	Leu 290	Phe	Val	Ala	Asn	Asp	Lys	Lys	Thr 300	Ser	Phe	Ile	Glu	Asn	Arg
Ala 305	Leu	Ser	Gly	Gly	Ala	Ile	Ala	Ala	Ser	Ser	Asp	Ile	Ala	Phe	Gln
Asn	Cys	Ala	Glu	Leu 325	Val	Phe	Lys	Gly	Asn 330	Cys	Ala	Ile	Gly	Thr	Glu
Asp	Lys	Gly	Ser	Leu 340	Gly	Gly	Gly	Ala	Ile 345	Ser	Ser	Leu	Gly	Thr	Val
Leu	Leu	Gln	Gly	Asn 355	His	Gly	Ile	Thr	Cys 360	Asp	Lys	Asn	Glu	Ser	Ala
Ser	Gln 370	Gly	Gly	Ala	Ile	Phe	Gly	Lys	Asn 375	Cys	Gln	Ile	Ser	Asp	Asn
Glu 385	Gly	Pro	Val	Val	Phe	Arg	Asp	Ser	Thr 390	Ala	Cys	Leu	Gly	Gly	Gly
Ala	Ile	Ala	Ala	Gln 405	Glu	Ile	Val	Ser	Ile 410	Gln	Asn	Asn	Gln	Ala	Gly
Ile	Ser	Phe	Glu	Gly 420	Gly	Lys	Ala	Ser	Phe 425	Gly	Gly	Gly	Ile	Ala	Cys

Gly	Ser	Phe	Ser	Ser	Ala	Gly	Gly	Ala	Ser	Val	Leu	Gly	Thr	Ile	Asp
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Ile	Ser	Lys	Asn	Leu	Gly	Ala	Ile	Ser	Phe	Ser	Arg	Thr	Leu	Cys	Thr
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Thr	Ser	Asp	Leu	Gly	Gln	Met	Glu	Tyr	Gln	Gly	Gly	Gly	Ala	Leu	Phe
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Gly	Glu	Asn	Ile	Ser	Leu	Ser	Glu	Asn	Ala	Gly	Val	Leu	Thr	Phe	Lys
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Gly	Ala	Ile	Leu	Ala	Thr	Gly	Lys	Val	Glu	Ile	Thr	Asn	Asn	Ser	Gly
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Gly	Ile	Ser	Phe	Thr	Gly	Asn	Ala	Arg	Ala	Pro	Gln	Ala	Leu	Pro	Thr
	530					535					540				
Gln	Glu	Glu	Phe	Pro	Leu	Phe	Ser	Lys	Lys	Glu	Gly	Arg	Pro	Leu	Ser
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Ser	Gly	Tyr	Ser	Gly	Gly	Gly	Ala	Ile	Leu	Gly	Arg	Glu	Val	Ala	Ile
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Leu	His	Asn	Ala	Ala	Val	Val	Phe	Glu	Gln	Asn	Arg	Leu	Gln	Cys	Ser
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Asn	Asn	Tyr	Ala	Met	Gly	Gln	Gly	Val	Ser	Gly	Gly	Ala	Leu	Leu	Ser
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Lys	Thr	Val	Gln	Leu	Ala	Gly	Asn	Gly	Ser	Val	Asp	Phe	Ser	Arg	Asn
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Ile	Ala	Ser	Leu	Gly	Gly	Gly	Ala	Leu	Gln	Ala	Ser	Glu	Gly	Asn	Cys
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Glu	Leu	Val	Asp	Asn	Gly	Tyr	Val	Leu	Phe	Arg	Asp	Asn	Arg	Gly	Arg
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Val	Tyr	Gly	Gly	Ala	Ile	Ser	Cys	Leu	Arg	Gly	Asp	Val	Val	Ile	Ser
	690					695					700				
Gly	Asn	Lys	Gly	Arg	Val	Glu	Phe	Lys	Asp	Asn	Ile	Ala	Thr	Arg	Leu
705					710					715					720
Tyr	Val	Glu	Glu	Thr	Val	Glu	Lys	Val	Glu	Val	Glu	Pro	Ala	Pro	
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Ser	Phe	Ile	Thr	Ala	Ala	Asn	Gln	Ala	Leu	Phe	Ala	Ser	Glu	Asp	Gly
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Arg	Glu	Cys	Ala	Gly	Gly	Ala	Ile	Phe	Ala	Lys	Arg	Val	Arg	Ile	Val
785					790					795					800
Asp	Asn	Gln	Glu	Ala	Val	Val	Phe	Ser	Asn	Asn	Phe	Ser	Asp	Ile	Tyr
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Gly	Gln	Ile	Pro	Glu	Val	Leu	Ile	Ser	Gly	Asn	Ala	Gly	Asp	Val	Val
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Phe	Ser	Gly	Asn	Ser	Ser	Lys	Arg	Asp	Glu	His	Leu	Pro	His	Thr	Gly
	850					855					860				
Gly	Gly	Ala	Ile	Cys	Thr	Gln	Asn	Leu	Thr	Ile	Ser	Gln	Asn	Thr	Gly
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Asn	Val	Leu	Phe	Tyr	Asn	Asn	Val	Ala	Cys	Ser	Gly	Gly	Ala	Val	Arg

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Ile	Glu	Asp	His	Gly	Asn	Val	Leu	Leu	Glu	Ala	Phe	Gly	Gly	Asp	Ile	
			900					905					910			
Val	Phe	Lys	Gly	Asn	Ser	Ser	Phe	Arg	Ala	Gln	Gly	Ser	Asp	Ala	Ile	
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Tyr	Phe	Ala	Gly	Lys	Glu	Ser	His	Ile	Thr	Ala	Leu	Asn	Ala	Thr	Glu	
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Gly	His	Ala	Ile	Val	Phe	His	Asp	Ala	Leu	Val	Phe	Glu	Asn	Leu	Lys	
945					950				955						960	
Glu	Arg	Lys	Ser	Ala	Glu	Val	Leu	Leu	Ile	Asn	Ser	Arg	Glu	Asn	Pro	
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Gly	Tyr	Thr	Gly	Ser	Ile	Arg	Phe	Leu	Glu	Ala	Glu	Ser	Lys	Val	Pro	
			980					985					990			
Gln	Cys	Ile	His	Val	Gln	Gln	Gly	Ser	Leu	Glu	Leu	Leu	Asn	Gly	Ala	
		995					1000					1005				
Thr	Leu	Cys	Ser	Tyr	Gly	Phe	Lys	Gln	Asp	Ala	Gly	Ala	Lys	Leu	Val	
	1010					1015					1020					
Leu	Ala	Ala	Gly	Ser	Lys	Leu	Lys	Ile	Leu	Asp	Ser	Gly	Thr	Pro	Val	
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Gln	Gly	His	Ala	Ile	Ser	Lys	Pro	Glu	Ala	Glu	Ile	Glu	Ser	Ser	Ser	
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Glu	Pro	Glu	Gly	Ala	His	Ser	Leu	Trp	Ile	Ala	Lys	Asn	Ala	Gln	Thr	
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Thr	Val	Pro	Met	Val	Asp	Ile	His	Thr	Ile	Ser	Val	Asp	Leu	Ala	Ser	
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Phe	Ser	Ser	Ser	Gln	Gln	Glu	Gly	Thr	Val	Glu	Ala	Pro	Gln	Val	Ile	
	1090					1095					1100					
Val	Pro	Gly	Gly	Ser	Tyr	Val	Arg	Ser	Gly	Glu	Leu	Asn	Leu	Glu	Leu	
1105					1110					1115					1120	
Val	Asn	Thr	Thr	Gly	Thr	Gly	Tyr	Glu	Asn	His	Ala	Leu	Leu	Lys	Asn	
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Glu	Ala	Lys	Val	Pro	Leu	Met	Ser	Phe	Val	Ala	Ser	Ser	Asp	Glu	Ala	
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Ser	Glu	Ala	Lys	Ile	Gln	Asp	Gly	Thr	Leu	Val	Ile	Asn	Trp	Asn	Pro	
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Thr	Gly	Tyr	Arg	Leu	Asp	Pro	Gln	Lys	Ala	Gly	Ala	Leu	Val	Phe	Asn	
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Ala	Leu	Trp	Glu	Glu	Gly	Ala	Val	Leu	Ser	Ala	Leu	Lys	Asn	Al		

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 Thr Ser Arg Gly Val Leu Ala Asp Ala Leu Val Glu Tyr Arg Ser Leu
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 Val Gly Pro Val Arg Pro Thr Phe Tyr Ala Leu His Phe Asn Pro Tyr
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 Val Glu Val Ser Tyr Ala Ser Met Lys Phe Pro Gly Phe Thr Glu Gln
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 Gly Arg Glu Ala Arg Ser Phe Glu Asp Ala Ser Leu Thr Asn Ile Thr
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 Ile Pro Leu Gly Met Lys Phe Glu Leu Ala Phe Ile Lys Gly Gln Phe
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 Ser Glu Val Asn Ser Leu Gly Ile Ser Tyr Ala Trp Glu Ala Tyr Arg
 1445 1450 1455
 Lys Val Glu Gly Gly Ala Val Gln Leu Leu Glu Ala Gly Phe Asp Trp
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 Glu Gly Ala Pro Met Asp Leu Pro Arg Gln Glu Leu Arg Val Ala Leu
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 Glu Asn Asn Thr Glu Trp Ser Ser Tyr Phe Ser Thr Val Leu Gly Leu
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 Asp Met Met Leu Ala Asp Asn Thr Glu Tyr Arg Ala Ala Asp Ser Val
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 Ser Phe Tyr Asp Phe Ser Thr Ser Ser Gly Leu Pro Arg Lys His Leu
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 Ser Ser Gly Glu Asn Thr Glu Asn Ser Gln Asp Ser Ala Pro Ser Ser
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 Gly Glu Thr Asp Lys Lys Thr Glu Glu Leu Asp Asn Gly Gly Ile
 115 120 125
 Ile Tyr Ala Arg Glu Lys Leu Thr Ile Ser Glu Ser Gln Asp Ser Leu
 130 135 140
 Ser Asn Pro Ser Ile Glu Leu His Asp Asn Ser Phe Phe Phe Gly Glu
 145 150 155 160
 Gly Glu Val Ile Phe Asp His Arg Val Ala Leu Lys Asn Gly Gly Ala
 165 170 175
 Ile Tyr Gly Glu Lys Glu Val Val Phe Glu Asn Ile Lys Ser Leu Leu
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 Val Glu Val Asn Ile Ser Val Glu Lys Gly Gly Ser Val Tyr Ala Lys
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Glu	Arg	Val	Ser	Leu	Glu	Asn	Val	Thr	Glu	Ala	Thr	Phe	Ser	Ser	Asn
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Glu	Cys	Val	Asp	Ser	Leu	Ser	Glu	Asp	Thr	Leu	Asp	Ser	Thr	Pro	Glu
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Thr	Asn	Ser	Leu	Gln	Phe	Leu	Lys	Asn	Ser	Ala	Gly	Gln	His	Gly	Gly
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Gly	Ala	Tyr	Val	Thr	Gln	Thr	Met	Ser	Val	Thr	Asn	Thr	Thr	Ser	Glu
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Ser	Ile	Thr	Thr	Pro	Pro	Leu	Val	Gly	Glu	Val	Ile	Phe	Ser	Glu	Asn
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Thr	Ala	Lys	Gly	His	Gly	Gly	Gly	Ile	Cys	Thr	Asn	Lys	Leu	Ser	Leu
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Pro	Glu	Ser	Ser	Thr	Pro	Ser	Ser	Ser	Ser	Pro	Ala	Ser	Thr	Pro	Glu
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Val	Val	Ala	Ser	Ala	Lys	Ile	Asn	Arg	Phe	Phe	Ala	Ser	Thr	Ala	Glu
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Pro	Ala	Ala	Pro	Ser	Leu	Thr	Glu	Ala	Glu	Ser	Asp	Gln	Thr	Asp	Gln
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Thr	Glu	Thr	Ser	Asp	Thr	Asn	Ser	Asp	Ile	Asp	Val	Ser	Ile	Glu	Asn
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Ile	Leu	Asn	Val	Ala	Ile	Asn	Gln	Asn	Thr	Ser	Ala	Lys	Lys	Gly	Gly
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Leu	Ser	Gly	Asn	Ser	Ser	Gln	Asp	Val	Gly	Gly	Gly	Leu	Cys	Leu	Thr
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Glu	Ser	Val	Glu	Phe	Asp	Ala	Ile	Gly	Ser	Leu	Leu	Ser	His	Tyr	Asn
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Ile	Val	Glu	Ser	Thr	Pro	Glu	Ala	Pro	Glu	Glu	Ile	Pro	Pro	Val	Glu
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Ser	Ser	Ala	Asn	Thr	Asn	Leu	Glu	Gly	Ser	Gln	Gly	Asp	Thr	Ala	Asp

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Thr	Gly	Thr	Gly	Val	Val	Asn	Asn	Glu	Ser	Gln	Asp	Thr	Ser	Asp	Thr								
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Glu	Glu	Asn	Thr	Leu	Pro	Asn	Ser	Ser	Ile	Asp	Gln	Ser	Asn	Glu	Asn								
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<213> Chlamydia

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 <213> Chlamydia

<400> 187

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<400> 188

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Phe	Leu	Ser	Asn	Ser	Gly	Asp	Glu	Asn	Phe	Tyr	Glu	Asn	Val	Glu	Leu	
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Asp 65	Asn	Ser	Ile	Ala	Ala 70	Leu	Pro	Leu	Ser	Cys 75	Phe	Gly	Asn	Leu 80	Leu
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 Trp Leu Gly Ser Asn Gln Lys Ile Asn Val Leu Lys Leu Gln Leu Gly
 625 630 635 640
 Thr Lys Pro Pro Ala Asn Ala Pro Ser Asp Leu Thr Leu Gly Asn Glu
 645 650 655
 Met Pro Lys Tyr Gly Tyr Gln Gly Ser Trp Lys Leu Ala Trp Asp Pro
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 675 680 685
 Thr Gly Tyr Asn Pro Gly Pro Glu Arg Val Ala Ser Leu Val Pro Asn
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 Ser Leu Trp Gly Ser Ile Leu Asp Ile Arg Ser Ala His Ser Ala Ile
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 Gln Ala Ser Val Asp Gly Arg Ser Tyr Cys Arg Gly Leu Trp Val Ser
 725 730 735
 Gly Val Ser Asn Phe Phe Tyr His Asp Arg Asp Ala Leu Gly Gln Gly
 740 745 750
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 Gly Ser Ser Met Phe Gly Leu Ala Phe Thr Glu Val Phe Gly Arg Ser
 770 775 780
 Lys Asp Tyr Val Val Cys Arg Ser Asn His His Ala Cys Ile Gly Ser
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 Val Tyr Leu Ser Thr Gln Gln Ala Leu Cys Gly Ser Tyr Leu Phe Gly
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 820 825 830
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 835 840 845
 Cys Leu Ala Gly Glu Ile Gly Ala Gly Leu Pro Ile Val Ile Thr Pro
 850 855 860
 Ser Lys Leu Tyr Leu Asn Glu Leu Arg Pro Phe Val Gln Ala Glu Phe
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Ile	Phe	Tyr	Asp	Pro	Ile	Glu	Val	Ser	Asn	Ala	Gly	Val	Ser	Val	Ser
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Phe	Asn	Lys	Glu	Ala	Asp	Gln	Thr	Gly	Ser	Val	Val	Phe	Ser	Gly	Ala
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Thr	Val	Asn	Ser	Ala	Asp	Phe	His	Gln	Arg	Asn	Leu	Gln	Thr	Lys	Thr
450						455					460				
Pro	Ala	Pro	Leu	Thr	Leu	Ser	Asn	Gly	Phe	Leu	Cys	Ile	Glu	Asp	His
465					470					475					480
Ala	Gln	Leu	Thr	Val	Asn	Arg	Phe	Thr	Gln	Thr	Gly	Gly	Val	Val	Ser
				485					490					495	
Leu	Gly	Asn	Gly	Ala	Val	Leu	Ser	Cys	Tyr	Lys	Asn	Gly	Thr	Gly	Asp
			500					505					510		
Ser	Ala	Ser	Asn	Ala	Ser	Ile	Thr	Leu	Lys	His	Ile	Gly	Leu	Asn	Leu
		515					520					525			
Ser	Ser	Ile	Leu	Lys	Ser	Gly	Ala	Glu	Ile	Pro	Leu	Leu	Trp	Val	Glu
	530					535					540				
Pro	Thr	Asn	Asn	Ser	Asn	Asn	Tyr	Thr	Ala	Asp	Thr	Ala	Ala	Thr	Phe
545					550					555					560
Ser	Leu	Ser	Asp	Val	Lys	Leu	Ser	Leu	Ile	Asp	Asp	Tyr	Gly	Asn	Ser
				565					570					575	
Pro	Tyr	Glu	Ser	Thr	Asp	Leu	Thr	His	Ala	Leu	Ser	Ser	Gln	Pro	Met
				580				585					590		
Leu	Ser	Ile	Ser	Glu	Ala	Ser	Asp	Asn	Gln	Leu	Gln	Ser	Glu	Asn	Ile
		595					600					605			
Asp	Phe	Ser	Gly	Leu	Asn	Val	Pro	His	Tyr	Gly	Trp	Gln	Gly	Leu	Trp
	610					615					620				
Thr	Trp	Gly	Trp	Ala	Lys	Thr	Gln	Asp	Pro	Glu	Pro	Ala	Ser	Ser	Ala
625					630					635					640
Thr	Ile	Thr	Asp	Pro	Gln	Lys	Ala	Asn	Arg	Phe	His	Arg	Thr	Leu	Leu
				645					650					655	
Leu	Thr	Trp	Leu	Pro	Ala	Gly	Tyr	Val	Pro	Ser	Pro	Lys	His	Arg	Ser
			660					665				670			
Pro	Leu	Ile	Ala	Asn	Thr	Leu	Trp	Gly	Asn	Met	Leu	Leu	Ala	Thr	Glu
		675					680					685			
Ser	Leu	Lys	Asn	Ser	Ala	Glu	Leu	Thr	Pro	Ser	Gly	His	Pro	Phe	Trp
		690				695					700				
Gly	Ile	Thr	Gly	Gly	Gly	Leu	Gly	Met	Met	Val	Tyr	Gln	Asp	Pro	Arg
705					710					715					720
Glu	Asn	His	Pro	Gly	Phe	His	Met	Arg	Ser	Ser	Gly	Tyr	Ser	Ala	Gly
				725					730					735	
Met	Ile	Ala	Gly	Gln	Thr	His	Thr	Phe	Ser	Leu	Lys	Phe	Ser	Gln	Thr
			740					745					750		
Tyr	Thr	Lys	Leu	Asn	Glu	Arg	Tyr	Ala	Lys	Asn	Asn	Val	Ser	Ser	Lys
		755					760					765			
Asn	Tyr	Ser	Cys	Gln	Gly	Glu	Met	Leu	Phe	Ser	Leu	Gln	Glu	Gly	Phe
		770				775					780				
Leu	Leu	Thr	Lys	Leu	Val	Gly	Leu	Tyr	Ser	Tyr	Gly	Asp	His	Asn	Cys
785					790					795					800
His	His	Phe	Tyr	Thr	Gln	Gly	Glu	Asn	Leu	Thr	Ser	Gln	Gly	Thr	Phe
				805					810					815	
Arg	Ser	Gln	Thr	Met	Gly	Gly	Ala	Val	Phe	Phe	Asp	Leu	Pro	Met	Lys
			820					825					830		
Pro	Phe	Gly	Ser	Thr	His	Ile	Leu	Thr	Ala	Pro	Phe	Leu	Gly	Ala	Leu
			835				840					845			
Gly	Ile	Tyr	Ser	Ser	Leu	Ser	His	Phe	Thr	Glu	Val	Gly	Ala	Tyr	Pro
	850					855					860				
Arg	Ser	Phe	Ser	Thr	Lys	Thr	Pro	Leu	Ile	Asn	Val	Leu	Val	Pro	Ile
865					870					875					880
Gly	Val	Lys	Gly	Ser	Phe	Met	Asn	Ala	Thr	His	Arg	Pro	Gln	Ala	Trp
				885					890					895	
Thr	Val	Glu	Leu	Ala	Tyr	Gln	Pro	Val	Leu	Tyr	Arg	Gln	Glu	Pro	Gly

900 905 910
 Ile Ala Thr Gln Leu Leu Ala Ser Lys Gly Ile Trp Phe Gly Ser Gly
 915 920 925
 Ser Pro Ser Ser Arg His Ala Met Ser Tyr Lys Ile Ser Gln Gln Thr
 930 935 940
 Gln Pro Leu Ser Trp Leu Thr Leu His Phe Gln Tyr His Gly Phe Tyr
 945 950 955 960
 Ser Ser Ser Thr Phe Cys Asn Tyr Leu Asn Gly Glu Ile Ala Leu Arg
 965 970 975
 Phe

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 <211> 848
 <212> PRT
 <213> Chlamydia

<400> 192
 Met Ala Ser His His His His His His Gly Ala Ile Ser Cys Leu Arg
 1 5 10 15
 Gly Asp Val Val Ile Ser Gly Asn Lys Gly Arg Val Glu Phe Lys Asp
 20 25 30
 Asn Ile Ala Thr Arg Leu Tyr Val Glu Glu Thr Val Glu Lys Val Glu
 35 40 45
 Glu Val Glu Pro Ala Pro Glu Gln Lys Asp Asn Asn Glu Leu Ser Phe
 50 55 60
 Leu Gly Ser Val Glu Gln Ser Phe Ile Thr Ala Ala Asn Gln Ala Leu
 65 70 75 80
 Phe Ala Ser Glu Asp Gly Asp Leu Ser Pro Glu Ser Ser Ile Ser Ser
 85 90 95
 Glu Glu Leu Ala Lys Arg Arg Glu Cys Ala Gly Gly Ala Ile Phe Ala
 100 105 110
 Lys Arg Val Arg Ile Val Asp Asn Gln Glu Ala Val Val Phe Ser Asn
 115 120 125
 Asn Phe Ser Asp Ile Tyr Gly Gly Ala Ile Phe Thr Gly Ser Leu Arg
 130 135 140
 Glu Glu Asp Lys Leu Asp Gly Gln Ile Pro Glu Val Leu Ile Ser Gly
 145 150 155 160
 Asn Ala Gly Asp Val Val Phe Ser Gly Asn Ser Ser Lys Arg Asp Glu
 165 170 175
 His Leu Pro His Thr Gly Gly Gly Ala Ile Cys Thr Gln Asn Leu Thr
 180 185 190
 Ile Ser Gln Asn Thr Gly Asn Val Leu Phe Tyr Asn Asn Val Ala Cys
 195 200 205
 Ser Gly Gly Ala Val Arg Ile Glu Asp His Gly Asn Val Leu Leu Glu
 210 215 220
 Ala Phe Gly Gly Asp Ile Val Phe Lys Gly Asn Ser Ser Phe Arg Ala
 225 230 235 240
 Gln Gly Ser Asp Ala Ile Tyr Phe Ala Gly Lys Glu Ser His Ile Thr
 245 250 255
 Ala Leu Asn Ala Thr Glu Gly His Ala Ile Val Phe His Asp Ala Leu
 260 265 270
 Val Phe Glu Asn Leu Lys Glu Arg Lys Ser Ala Glu Val Leu Leu Ile
 275 280 285
 Asn Ser Arg Glu Asn Pro Gly Tyr Thr Gly Ser Ile Arg Phe Leu Glu
 290 295 300
 Ala Glu Ser Lys Val Pro Gln Cys Ile His Val Gln Gln Gly Ser Leu

305					310					315				320	
Glu	Leu	Leu	Asn	Gly	Ala	Thr	Leu	Cys	Ser	Tyr	Gly	Phe	Lys	Gln	Asp
				325					330					335	
Ala	Gly	Ala	Lys	Leu	Val	Leu	Ala	Ala	Gly	Ser	Lys	Leu	Lys	Ile	Leu
			340					345					350		
Asp	Ser	Gly	Thr	Pro	Val	Gln	Gly	His	Ala	Ile	Ser	Lys	Pro	Glu	Ala
		355					360					365			
Glu	Ile	Glu	Ser	Ser	Ser	Glu	Pro	Glu	Gly	Ala	His	Ser	Leu	Trp	Ile
	370					375					380				
Ala	Lys	Asn	Ala	Gln	Thr	Thr	Val	Pro	Met	Val	Asp	Ile	His	Thr	Ile
385					390					395					400
Ser	Val	Asp	Leu	Ala	Ser	Phe	Ser	Ser	Ser	Gln	Gln	Glu	Gly	Thr	Val
				405					410					415	
Glu	Ala	Pro	Gln	Val	Ile	Val	Pro	Gly	Gly	Ser	Tyr	Val	Arg	Ser	Gly
			420					425					430		
Glu	Leu	Asn	Leu	Glu	Leu	Val	Asn	Thr	Thr	Gly	Thr	Gly	Tyr	Glu	Asn
		435					440					445			
His	Ala	Leu	Leu	Lys	Asn	Glu	Ala	Lys	Val	Pro	Leu	Met	Ser	Phe	Val
	450					455					460				
Ala	Ser	Ser	Asp	Glu	Ala	Ser	Ala	Glu	Ile	Ser	Asn	Leu	Ser	Val	Ser
465					470					475					480
Asp	Leu	Gln	Ile	His	Val	Ala	Thr	Pro	Glu	Ile	Glu	Glu	Asp	Thr	Tyr
				485					490					495	
Gly	His	Met	Gly	Asp	Trp	Ser	Glu	Ala	Lys	Ile	Gln	Asp	Gly	Thr	Leu
			500					505					510		
Val	Ile	Asn	Trp	Asn	Pro	Thr	Gly	Tyr	Arg	Leu	Asp	Pro	Gln	Lys	Ala
		515					520					525			
Gly	Ala	Leu	Val	Phe	Asn	Ala	Leu	Trp	Glu	Glu	Gly	Ala	Val	Leu	Ser
	530					535					540				
Ala	Leu	Lys	Asn	Ala	Arg	Phe	Ala	His	Asn	Leu	Thr	Ala	Gln	Arg	Met
545					550					555					560
Glu	Phe	Asp	Tyr	Ser	Thr	Asn	Val	Trp	Gly	Phe	Ala	Phe	Gly	Gly	Phe
				565					570					575	
Arg	Thr	Leu	Ser	Ala	Glu	Asn	Leu	Val	Ala	Ile	Asp	Gly	Tyr	Lys	Gly
			580					585					590		
Ala	Tyr	Gly	Gly	Ala	Ser	Ala	Gly	Val	Asp	Ile	Gln	Leu	Met	Glu	Asp
		595					600					605			
Phe	Val	Leu	Gly	Val	Ser	Gly	Ala	Ala	Phe	Leu	Gly	Lys	Met	Asp	Ser
	610					615					620				
Gln	Lys	Phe	Asp	Ala	Glu	Val	Ser	Arg	Lys	Gly	Val	Val	Gly	Ser	Val
625					630					635					640
Tyr	Thr	Gly	Phe	Leu	Ala	Gly	Ser	Trp	Phe	Phe	Lys	Gly	Gln	Tyr	Ser
				645					650					655	
Leu	Gly	Glu	Thr	Gln	Asn	Asp	Met	Lys	Thr	Arg	Tyr	Gly	Val	Leu	Gly
			660					665					670		
Glu	Ser	Ser	Ala	Ser	Trp	Thr	Ser	Arg	Gly	Val	Leu	Ala	Asp	Ala	Leu
		675						680				685			
Val	Glu	Tyr	Arg	Ser	Leu	Val	Gly	Pro	Val	Arg	Pro	Thr	Phe	Tyr	Ala
	690					695					700				
Leu	His	Phe	Asn	Pro	Tyr	Val	Glu	Val	Ser	Tyr	Ala	Ser	Met	Lys	Phe
705					710					715					720
Pro	Gly	Phe	Thr	Glu	Gln	Gly	Arg	Glu	Ala	Arg	Ser	Phe	Glu	Asp	Ala
				725					730					735	
Ser	Leu	Thr	Asn	Ile	Thr	Ile	Pro	Leu	Gly	Met	Lys	Phe	Glu	Leu	Ala
			740					745					750		
Phe	Ile	Lys	Gly	Gln	Phe	Ser	Glu	Val	Asn	Ser	Leu	Gly	Ile	Ser	Tyr
		755					760					765			

Ala Trp Glu Ala Tyr Arg Lys Val Glu Gly Gly Ala Val Gln Leu Leu
 770 775 780
 Glu Ala Gly Phe Asp Trp Glu Gly Ala Pro Met Asp Leu Pro Arg Gln
 785 790 795 800
 Glu Leu Arg Val Ala Leu Glu Asn Asn Thr Glu Trp Ser Ser Tyr Phe
 805 810 815
 Ser Thr Val Leu Gly Leu Thr Ala Phe Cys Gly Gly Phe Thr Ser Thr
 820 825 830
 Asp Ser Lys Leu Gly Tyr Glu Ala Asn Thr Gly Leu Arg Leu Ile Phe
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<211> 778

<212> PRT

<213> Chlamydia

<400> 193

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 Ala Gly Gly Gln Ser Val Asn Glu Leu Val Tyr Val Gly Pro Gln Ala
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 Val Leu Leu Leu Asp Gln Ile Arg Asp Leu Phe Val Gly Ser Lys Asp
 35 40 45
 Ser Gln Ala Glu Gly Gln Tyr Arg Leu Ile Val Gly Asp Pro Ser Ser
 50 55 60
 Phe Gln Glu Lys Asp Ala Asp Thr Leu Pro Gly Lys Val Glu Gln Ser
 65 70 75 80
 Thr Leu Phe Ser Val Thr Asn Pro Val Val Phe Gln Gly Val Asp Gln
 85 90 95
 Gln Asp Gln Val Ser Ser Gln Gly Leu Ile Cys Ser Phe Thr Ser Ser
 100 105 110
 Asn Leu Asp Ser Pro Arg Asp Gly Glu Ser Phe Leu Gly Ile Ala Phe
 115 120 125
 Val Gly Asp Ser Ser Lys Ala Gly Ile Thr Leu Thr Asp Val Lys Ala
 130 135 140
 Ser Leu Ser Gly Ala Ala Leu Tyr Ser Thr Glu Asp Leu Ile Phe Glu
 145 150 155 160
 Lys Ile Lys Gly Gly Leu Glu Phe Ala Ser Cys Ser Ser Leu Glu Gln
 165 170 175
 Gly Gly Ala Cys Ala Ala Gln Ser Ile Leu Ile His Asp Cys Gln Gly
 180 185 190
 Leu Gln Val Lys His Cys Thr Thr Ala Val Asn Ala Glu Gly Ser Ser
 195 200 205
 Ala Asn Asp His Leu Gly Phe Gly Gly Gly Ala Phe Phe Val Thr Gly
 210 215 220
 Ser Leu Ser Gly Glu Lys Ser Leu Tyr Met Pro Ala Gly Asp Met Val
 225 230 235 240
 Val Ala Asn Cys Asp Gly Ala Ile Ser Phe Glu Gly Asn Ser Ala Asn
 245 250 255
 Phe Ala Asn Gly Gly Ala Ile Ala Ala Ser Gly Lys Val Leu Phe Val
 260 265 270
 Ala Asn Asp Lys Lys Thr Ser Phe Ile Glu Asn Arg Ala Leu Ser Gly
 275 280 285
 Gly Ala Ile Ala Ala Ser Ser Asp Ile Ala Phe Gln Asn Cys Ala Glu
 290 295 300
 Leu Val Phe Lys Gly Asn Cys Ala Ile Gly Thr Glu Asp Lys Gly Ser
 305 310 315 320

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Leu Gly Gly Gly Ala Ile Ser Ser Leu Gly Thr Val Leu Leu Gln Gly
      325      330      335
Asn His Gly Ile Thr Cys Asp Lys Asn Glu Ser Ala Ser Gln Gly Gly
      340      345      350
Ala Ile Phe Gly Lys Asn Cys Gln Ile Ser Asp Asn Glu Gly Pro Val
      355      360      365
Val Phe Arg Asp Ser Thr Ala Cys Leu Gly Gly Gly Ala Ile Ala Ala
      370      375      380
Gln Glu Ile Val Ser Ile Gln Asn Asn Gln Ala Gly Ile Ser Phe Glu
      385      390      395      400
Gly Gly Lys Ala Ser Phe Gly Gly Gly Ile Ala Cys Gly Ser Phe Ser
      405      410      415
Ser Ala Gly Gly Ala Ser Val Leu Gly Thr Ile Asp Ile Ser Lys Asn
      420      425      430
Leu Gly Ala Ile Ser Phe Ser Arg Thr Leu Cys Thr Thr Ser Asp Leu
      435      440      445
Gly Gln Met Glu Tyr Gln Gly Gly Gly Ala Leu Phe Gly Glu Asn Ile
      450      455      460
Ser Leu Ser Glu Asn Ala Gly Val Leu Thr Phe Lys Asp Asn Ile Val
      465      470      475      480
Lys Thr Phe Ala Ser Asn Gly Lys Ile Leu Gly Gly Gly Ala Ile Leu
      485      490      495
Ala Thr Gly Lys Val Glu Ile Thr Asn Asn Ser Gly Gly Ile Ser Phe
      500      505      510
Thr Gly Asn Ala Arg Ala Pro Gln Ala Leu Pro Thr Gln Glu Glu Phe
      515      520      525
Pro Leu Phe Ser Lys Lys Glu Gly Arg Pro Leu Ser Ser Gly Tyr Ser
      530      535      540
Gly Gly Gly Ala Ile Leu Gly Arg Glu Val Ala Ile Leu His Asn Ala
      545      550      555      560
Ala Val Val Phe Glu Gln Asn Arg Leu Gln Cys Ser Glu Glu Glu Ala
      565      570      575
Thr Leu Leu Gly Cys Cys Gly Gly Gly Ala Val His Gly Met Asp Ser
      580      585      590
Thr Ser Ile Val Gly Asn Ser Ser Val Arg Phe Gly Asn Asn Tyr Ala
      595      600      605
Met Gly Gln Gly Val Ser Gly Gly Ala Leu Leu Ser Lys Thr Val Gln
      610      615      620
Leu Ala Gly Asn Gly Ser Val Asp Phe Ser Arg Asn Ile Ala Ser Leu
      625      630      635      640
Gly Gly Gly Ala Leu Gln Ala Ser Glu Gly Asn Cys Glu Leu Val Asp
      645      650      655      660
Asn Gly Tyr Val Leu Phe Arg Asp Asn Arg Gly Arg Val Tyr Gly Gly
      660      665      670
Ala Ile Ser Cys Leu Arg Gly Asp Val Val Ile Ser Gly Asn Lys Gly
      675      680      685
Arg Val Glu Phe Lys Asp Asn Ile Ala Thr Arg Leu Tyr Val Glu Glu
      690      695      700
Thr Val Glu Lys Val Glu Glu Val Glu Pro Ala Pro Glu Gln Lys Asp
      705      710      715      720
Asn Asn Glu Leu Ser Phe Leu Gly Ser Val Glu Gln Ser Phe Ile Thr
      725      730      735
Ala Ala Asn Gln Ala Leu Phe Ala Ser Glu Asp Gly Asp Leu Ser Pro
      740      745      750
Glu Ser Ser Ile Ser Ser Glu Glu Leu Ala Lys Arg Arg Glu Cys Ala
      755      760      765
Gly Gly Ala Asp Ser Ser Arg Ser Gly Cys

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770

775

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 <211> 948
 <212> PRT
 <213> Chlamydia

<400> 194
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 Ser Gly Gln Gly Ile Phe Ser Gly Asn Lys Ala Ile Asp Asn Thr Thr
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 Glu Gly Ser Ser Lys Ser Asn Val Leu Gly Gly Ala Val Tyr Ala
 35 40 45
 Lys Thr Leu Phe Asn Leu Asp Ser Gly Ser Ser Arg Arg Thr Val Thr
 50 55 60
 Phe Ser Gly Asn Thr Val Ser Ser Gln Ser Thr Thr Gly Gln Val Ala
 65 70 75 80
 Gly Gly Ala Ile Tyr Ser Pro Thr Val Thr Ile Ala Thr Pro Val Val
 85 90 95
 Phe Ser Lys Asn Ser Ala Thr Asn Asn Ala Asn Ala Thr Asp Thr
 100 105 110
 Gln Arg Lys Asp Thr Phe Gly Gly Ala Ile Gly Ala Thr Ser Ala Val
 115 120 125
 Ser Leu Ser Gly Gly Ala His Phe Leu Glu Asn Val Ala Asp Leu Gly
 130 135 140
 Ser Ala Ile Gly Leu Val Pro Asp Thr Gln Asn Thr Glu Thr Val Lys
 145 150 155 160
 Leu Glu Ser Gly Ser Tyr Tyr Phe Glu Lys Asn Lys Ala Leu Lys Arg
 165 170 175
 Ala Thr Ile Tyr Ala Pro Val Val Ser Ile Lys Ala Tyr Thr Ala Thr
 180 185 190
 Phe Asn Gln Asn Arg Ser Leu Glu Glu Gly Ser Ala Ile Tyr Phe Thr
 195 200 205
 Lys Glu Ala Ser Ile Glu Ser Leu Gly Ser Val Leu Phe Thr Gly Asn
 210 215 220
 Leu Val Thr Pro Thr Leu Ser Thr Thr Thr Glu Gly Thr Pro Ala Thr
 225 230 235 240
 Thr Ser Gly Asp Val Thr Lys Tyr Gly Ala Ala Ile Phe Gly Gln Ile
 245 250 255
 Ala Ser Ser Asn Gly Ser Gln Thr Asp Asn Leu Pro Leu Lys Leu Ile
 260 265 270
 Ala Ser Gly Gly Asn Ile Cys Phe Arg Asn Asn Glu Tyr Arg Pro Thr
 275 280 285
 Ser Ser Asp Thr Gly Thr Ser Thr Phe Cys Ser Ile Ala Gly Asp Val
 290 295 300
 Lys Leu Thr Met Gln Ala Ala Lys Gly Lys Thr Ile Ser Phe Phe Asp
 305 310 315 320
 Ala Ile Arg Thr Ser Thr Lys Lys Thr Gly Thr Gln Ala Thr Ala Tyr
 325 330 335
 Asp Thr Leu Asp Ile Asn Lys Ser Glu Asp Ser Glu Thr Val Asn Ser
 340 345 350
 Ala Phe Thr Gly Thr Ile Leu Phe Ser Ser Glu Leu His Glu Asn Lys
 355 360 365
 Ser Tyr Ile Pro Gln Asn Val Val Leu His Ser Gly Ser Leu Val Leu
 370 375 380
 Lys Pro Asn Thr Glu Leu His Val Ile Ser Phe Glu Gln Lys Glu Gly

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385					390					395					400
Ser	Ser	Leu	Val	Met	Thr	Pro	Gly	Ser	Val	Leu	Ser	Asn	Gln	Thr	Val
				405					410					415	
Ala	Asp	Gly	Ala	Leu	Val	Ile	Asn	Asn	Met	Thr	Ile	Asp	Leu	Ser	Ser
			420					425					430		
Val	Glu	Lys	Asn	Gly	Ile	Ala	Glu	Gly	Asn	Ile	Phe	Thr	Pro	Pro	Glu
		435						440				445			
Leu	Arg	Ile	Ile	Asp	Thr	Thr	Thr	Ser	Gly	Ser	Gly	Gly	Thr	Pro	Ser
	450					455					460				
Thr	Asp	Ser	Glu	Ser	Asn	Gln	Asn	Ser	Asp	Asp	Thr	Lys	Glu	Gln	Asn
465					470					475					480
Asn	Asn	Asp	Ala	Ser	Asn	Gln	Gly	Glu	Ser	Ala	Asn	Gly	Ser	Ser	Ser
				485					490					495	
Pro	Ala	Val	Ala	Ala	Ala	His	Thr	Ser	Arg	Thr	Arg	Asn	Phe	Ala	Ala
			500						505				510		
Ala	Ala	Thr	Ala	Thr	Pro	Thr	Thr	Thr	Pro	Thr	Ala	Thr	Thr	Thr	Thr
		515						520				525			
Ser	Asn	Gln	Val	Ile	Leu	Gly	Gly	Glu	Ile	Lys	Leu	Ile	Asp	Pro	Asn
	530					535					540				
Gly	Thr	Phe	Phe	Gln	Asn	Pro	Ala	Leu	Arg	Ser	Asp	Gln	Gln	Ile	Ser
545					550					555					560
Leu	Leu	Val	Leu	Pro	Thr	Asp	Ser	Ser	Lys	Met	Gln	Ala	Gln	Lys	Ile
				565					570					575	
Val	Leu	Thr	Gly	Asp	Ile	Ala	Pro	Gln	Lys	Gly	Tyr	Thr	Gly	Thr	Leu
			580					585					590		
Thr	Leu	Asp	Pro	Asp	Gln	Leu	Gln	Asn	Gly	Thr	Ile	Ser	Ala	Leu	Trp
		595					600					605			
Lys	Phe	Asp	Ser	Tyr	Arg	Gln	Trp	Ala	Tyr	Val	Pro	Arg	Asp	Asn	His
	610					615					620				
Phe	Tyr	Ala	Asn	Ser	Ile	Leu	Gly	Ser	Gln	Met	Ser	Met	Val	Thr	Val
625					630					635					640
Lys	Gln	Gly	Leu	Leu	Asn	Asp	Lys	Met	Asn	Leu	Ala	Arg	Phe	Asp	Glu
				645					650					655	
Val	Ser	Tyr	Asn	Asn	Leu	Trp	Ile	Ser	Gly	Leu	Gly	Thr	Met	Leu	Ser
			660					665					670		
Gln	Val	Gly	Thr	Pro	Thr	Ser	Glu	Glu	Phe	Thr	Tyr	Tyr	Ser	Arg	Gly
		675					680					685			
Ala	Ser	Val	Ala	Leu	Asp	Ala	Lys	Pro	Ala	His	Asp	Val	Ile	Val	Gly
		690				695					700				
Ala	Ala	Phe	Ser	Lys	Met	Ile	Gly	Lys	Thr	Lys	Ser	Leu	Lys	Arg	Glu
705					710					715					720
Asn	Asn	Tyr	Thr	His	Lys	Gly	Ser	Glu	Tyr	Ser	Tyr	Gln	Ala	Ser	Val
				725					730					735	
Tyr	Gly	Gly	Lys	Pro	Phe	His	Phe	Val	Ile	Asn	Lys	Lys	Thr	Glu	Lys
			740					745					750		
Ser	Leu	Pro	Leu	Leu	Leu	Gln	Gly	Val	Ile	Ser	Tyr	Gly	Tyr	Ile	Lys
		755					760					765			
His	Asp	Thr	Val	Thr	His	Tyr	Pro	Thr	Ile	Arg	Glu	Arg	Asn	Gln	Gly
	770					775					780				
Glu	Trp	Glu	Asp	Leu	Gly	Trp	Leu	Thr	Ala	Leu	Arg	Val	Ser	Ser	Val
785					790					795					800
Leu	Arg	Thr	Pro	Ala	Gln	Gly	Asp	Thr	Lys	Arg	Ile	Thr	Val	Tyr	Gly
				805					810					815	
Glu	Leu	Glu	Tyr	Ser	Ser	Ile	Arg	Gln	Lys	Gln	Phe	Thr	Glu	Thr	Glu
			820					825					830		
Tyr	Asp	Pro	Arg	Tyr	Phe	Asp	Asn	Cys	Thr	Tyr	Arg	Asn	Leu	Ala	Ile
		835					840					845			

Ser	Glu	Thr	Lys	Asp	Thr	Gln	Val	Ser	Glu	Ser	Pro	Glu	Ser	Thr	Pro
290						295					300				
Ser	Pro	Asp	Asp	Val	Leu	Gly	Lys	Gly	Gly	Gly	Ile	Tyr	Thr	Glu	Lys
305					310					315					320
Ser	Leu	Thr	Ile	Thr	Gly	Ile	Thr	Gly	Thr	Ile	Asp	Phe	Val	Ser	Asn
				325						330					335
Ile	Ala	Thr	Asp	Ser	Gly	Ala	Gly	Val	Phe	Thr	Lys	Glu	Asn	Leu	Ser
			340					345					350		
Cys	Thr	Asn	Thr	Asn	Ser	Leu	Gln	Phe	Leu	Lys	Asn	Ser	Ala	Gly	Gln
		355					360					365			
His	Gly	Gly	Gly	Ala	Tyr	Val	Thr	Gln	Thr	Met	Ser	Val	Thr	Asn	Thr
	370					375					380				
Thr	Ser	Glu	Ser	Ile	Thr	Thr	Pro	Pro	Leu	Val	Gly	Glu	Val	Ile	Phe
385					390					395					400
Ser	Glu	Asn	Thr	Ala	Lys	Gly	His	Gly	Gly	Gly	Ile	Cys	Thr	Asn	Lys
				405					410					415	
Leu	Ser	Leu	Ser	Asn	Leu	Lys	Thr	Val	Thr	Leu	Thr	Lys	Asn	Ser	Ala
			420					425					430		
Lys	Glu	Ser	Gly	Gly	Ala	Ile	Phe	Thr	Asp	Leu	Ala	Ser	Ile	Pro	Thr
		435					440					445			
Thr	Asp	Thr	Pro	Glu	Ser	Ser	Thr	Pro	Ser	Ser	Ser	Ser	Pro	Ala	Ser
	450					455					460				
Thr	Pro	Glu	Val	Val	Ala	Ser	Ala	Lys	Ile	Asn	Arg	Phe	Phe	Ala	Ser
465					470					475					480
Thr	Ala	Glu	Pro	Ala	Ala	Pro	Ser	Leu	Thr	Glu	Ala	Glu	Ser	Asp	Gln
				485					490					495	
Thr	Asp	Gln	Thr	Glu	Thr	Ser	Asp	Thr	Asn	Ser	Asp	Ile	Asp	Val	Ser
			500					505					510		
Ile	Glu	Asn	Ile	Leu	Asn	Val	Ala	Ile	Asn	Gln	Asn	Thr	Ser	Ala	Lys
	515						520					525			
Lys	Gly	Gly	Ala	Ile	Tyr	Gly	Lys	Lys	Ala	Lys	Leu	Ser	Arg	Ile	Asn
	530					535					540				
Asn	Leu	Glu	Leu	Ser	Gly	Asn	Ser	Ser	Gln	Asp	Val	Gly	Gly	Gly	Leu
545					550					555					560
Cys	Leu	Thr	Glu	Ser	Val	Glu	Phe	Asp	Ala	Ile	Gly	Ser	Leu	Leu	Ser
				565					570					575	
His	Tyr	Asn	Ser	Ala	Ala	Lys	Glu	Gly	Val	Ile	His	Ser	Ser	Lys	Thr
		580						585				590			
Val	Thr	Leu	Ser	Asn	Leu	Lys	Ser	Thr	Phe	Thr	Phe	Ala	Asp	Asn	Thr
		595					600					605			
Val	Lys	Ala	Ile	Val	Glu	Ser	Thr	Pro	Glu	Ala	Pro	Glu	Glu	Ile	Pro
	610					615					620				
Pro	Val	Glu	Gly	Glu	Glu	Ser	Thr	Ala	Thr	Glu	Asn	Pro	Asn	Ser	Asn
625					630					635					640
Thr	Glu	Gly	Ser	Ser	Ala	Asn	Thr	Asn	Leu	Glu	Gly	Ser	Gln	Gly	Asp
			645						650					655	
Thr	Ala	Asp	Thr	Gly	Thr	Gly	Val	Val	Asn	Asn	Glu	Ser	Gln	Asp	Thr
			660					665					670		
Ser	Asp	Thr	Gly	Asn	Ala	Glu	Ser	Gly	Glu	Gln	Leu	Gln	Asp	Ser	Thr
		675						680					685		
Gln	Ser	Asn	Glu	Glu	Asn	Thr	Leu	Pro	Asn	Ser	Ser	Ile	Asp	Gln	Ser
	690					695					700				
Asn	Glu	Asn	Thr	Asp	Glu	Ser	Ser	Asp	Ser	His	Thr	Glu	Glu	Ile	Thr
705					710					715					720
Asp	Glu	Ser	Val	Ser	Ser	Ser	Ser	Lys	Ser	Gly	Ser	Ser	Thr	Pro	Gln
				725					730					735	
Asp	Gly	Gly	Ala	Ala	Ser	Ser	Gly	Ala	Pro	Ser	Gly	Asp	Gln	Ser	Ile

305 310 315 320
 Trp Ser Val Gly Ala Arg Gly Ala Leu Trp Glu Cys Gly Cys Ala Thr
 325 330 335
 Leu Gly Ala Glu Phe Gln Tyr Ala Gln Ser Asn Pro Lys Ile Glu Met
 340 345 350
 Leu Asn Val Thr Ser Ser Pro Ala Gln Phe Val Ile His Lys Pro Arg
 355 360 365
 Gly Tyr Lys Gly Ala Ser Ser Asn Phe Pro Leu Pro Ile Thr Ala Gly
 370 375 380
 Thr Thr Glu Ala Thr Asp Thr Lys Ser Ala Thr Ile Lys Tyr His Glu
 385 390 395 400
 Trp Gln Val Gly Leu Ala Leu Ser Tyr Arg Leu Asn Met Leu Val Pro
 405 410 415
 Tyr Ile Gly Val Asn Trp Ser Arg Ala Thr Phe Asp Ala Asp Thr Ile
 420 425 430
 Arg Ile Ala Gln Pro Lys Leu Lys Ser Glu Ile Leu Asn Ile Thr Thr
 435 440 445
 Trp Asn Pro Ser Leu Ile Gly Ser Thr Thr Ala Leu Pro Asn Asn Ser
 450 455 460
 Gly Lys Asp Val Leu Ser Asp Val Leu Gln Ile Ala Ser Ile Gln Ile
 465 470 475 480
 Asn Lys Met Lys Ser Arg Lys Ala Cys Gly Val Ala Val Gly Ala Thr
 485 490 495
 Leu Ile Asp Ala Asp Lys Trp Ser Ile Thr Gly Glu Ala Arg Leu Ile
 500 505 510
 Asn Glu Arg Ala Ala His Met Asn Ala Gln Phe Arg Phe
 515 520 525

<210> 197
 <211> 43
 <212> DNA
 <213> Chlamydia

<400> 197
 gataggcgcg cgcgaatcat gaaatttatg tcagctactg ctg

43

<210> 198
 <211> 34
 <212> DNA
 <213> Chlamydia

<400> 198
 cagaacgcgt ttagaatgtc atacgagcac cgca

34

<210> 199
 <211> 6
 <212> DNA
 <213> Chlamydia

<400> 199
 gcaatc

6

<210> 200
 <211> 34
 <212> DNA
 <213> Chlamydia

tgcaatcatg agttcgcaga aagatataaa aagc 34

<210> 201
<211> 38

cagagctagc ttaaaagatc aatcgcaatc cagtattc 38

<210> 202
<211> 5

<400> 202	5
caatc	

<210> 209
<211> 31

tqcaatcatg aaaaaagcgt ttttcttttt c 31

<210> 204
<211> 31

cagaacgcgt ctagaatcgc agagcaattt c 31

<210> 209
<211> 30

<400> 205
gtgcaatcat gattcctcaa ggaatttacg 30

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<210> 200
<211> 31
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cagaacgcgt ttagaaccgg actttacttc c 3

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<210> 207
<211> 50
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✓400/ 207

cagacatatg catcaccatc accatcacga ggcgagctcg atccaagatc 50

<210> 208
 <211> 40
 <212> DNA
 <213> Chlamydia

<400> 208
 cagaggtacc tcagatagca ctctctccta ttaaagtagg 40

<210> 209
 <211> 55
 <212> DNA
 <213> Chlamydia

<400> 209
 cagagctagc atgcatcacc atcaccatca cgттаagatt gagaacttct ctggc 55

<210> 210
 <211> 35
 <212> DNA
 <213> Chlamydia

<400> 210
 cagaggtacc ttagaatgtc atacgagcac cgcag 35

<210> 211
 <211> 36
 <212> DNA
 <213> Chlamydia

<400> 211
 cagacatatg catcaccatc accatcacgg gttagc 36

<210> 212
 <211> 35
 <212> DNA
 <213> Chlamydia

<400> 212
 cagaggtacc tcagctcctc cagcacactc tottc 35

<210> 213
 <211> 51
 <212> DNA
 <213> Chlamydia

<400> 213
 cagagctagc catcaccatc accatcacgg tgctatttct tgcttacgtg g 51

<210> 214
 <211> 38
 <212> DNA
 <213> Chlamydia

<400> 214
 cagaggtact taaaagatca atcgcaatcc agtattcg 38

<400> 221
 Met Ala Ser Met Thr Gly Gly Gln Gln Asn Gly Arg Asp Ser Ser Leu
 1 5 10 15
 Val Pro His His His His His
 20

<210> 222
 <211> 46
 <212> DNA
 <213> Chlamydia

<400> 222
 cagagctagc catcaccatc accatcacct ctttggccag gatccc 46

<210> 223
 <211> 30
 <212> DNA
 <213> Chlamydia

<400> 223
 cagaactagt ctagaacctg taagtgggtcc 30

<210> 224
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 224
 Met Ser Gln Lys Asn Lys Asn Ser Ala Phe Met His Pro Val Asn Ile
 1 5 10 15
 Ser Thr Asp Leu
 20

<210> 225
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 225
 Lys Asn Ser Ala Phe Met His Pro Val Asn Ile Ser Thr Asp Leu Ala
 1 5 10 15
 Val Ile Val Gly
 20

<210> 226
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

His Pro Val Asn Ile Ser Thr Asp Leu Ala Val Ile Val Gly Lys Gly
1 5 10 15
Pro Met Pro Arg
20

<213> Artificial Sequence

<223> Made in a lab

Ser Thr Asp Leu Ala Val Ile Val Gly Lys Gly Pro Met Pro Arg Thr
1 5 10 15
Glu Ile Val Lys
20

<213> Artificial Sequence

<223> Made in a lab

Val Ile Val Gly Lys Gly Pro Met Pro Arg Thr Glu Ile Val Lys Lys
1 5 10 15
Val Trp Glu Tyr
20

<213> Artificial Sequence

<223> Made in a lab

Gly Pro Met Pro Arg Thr Glu Ile Val Lys Lys Val Trp Glu Tyr Ile
1 5 10 15
Lys Lys His Asn
20

<213> Artificial Sequence

<223> Made in a lab

<400> 230
 Ile Lys Lys His Asn Cys Gln Asp Gln Lys Asn Lys Arg Asn Ile Leu
 1 5 10 15
 Pro Asp Ala Asn
 20

<210> 231
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 231
 Asn Cys Gln Asp Gln Lys Asn Lys Arg Asn Ile Leu Pro Asp Ala Asn
 1 5 10 15
 Leu Ala Lys Val
 20

<210> 232
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 232
 Lys Asn Lys Arg Asn Ile Leu Pro Asp Ala Asn Leu Ala Lys Val Phe
 1 5 10 15
 Gly Ser Ser Asp
 20

<210> 233
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 233
 Ile Leu Pro Asp Ala Asn Leu Ala Lys Val Phe Gly Ser Ser Asp Pro
 1 5 10 15
 Ile Asp Met Phe
 20

<210> 234
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 234

Asn Leu Ala Lys Val Phe Gly Ser Ser Asp Pro Ile Asp Met Phe Gln
 1 5 10 15
 Met Thr Lys Ala
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<210> 235
 <211> 22
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 235
 Phe Gly Ser Ser Asp Pro Ile Asp Met Phe Gln Met Thr Lys Ala Leu
 1 5 10 15
 Ser Lys His Ile Val Lys
 20

<210> 236
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 236
 Val Glu Ile Thr Gln Ala Val Pro Lys Tyr Ala Thr Val Gly Ser Pro
 1 5 10 15
 Tyr Pro Val Glu
 20

<210> 237
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 237
 Ala Val Pro Lys Tyr Ala Thr Val Gly Ser Pro Tyr Pro Val Glu Ile
 1 5 10 15
 Thr Ala Thr Gly
 20

<210> 238
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 238
 Ala Thr Val Gly Ser Pro Tyr Pro Val Glu Ile Thr Ala Thr Gly Lys

1 5 10 15
 Arg Asp Cys Val
 20

<210> 239
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 239
 Pro Tyr Pro Val Glu Ile Thr Ala Thr Gly Lys Arg Asp Cys Val Asp
 1 5 10 15
 Val Ile Ile Thr
 20

<210> 240
 <211> 21
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 240
 Ile Thr Ala Thr Gly Lys Arg Asp Cys Val Asp Val Ile Ile Thr Gln
 1 5 10 15
 Gln Leu Pro Cys Glu
 20

<210> 241
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 241
 Lys Arg Asp Cys Val Asp Val Ile Ile Thr Gln Gln Leu Pro Cys Glu
 1 5 10 15
 Ala Glu Phe Val
 20

<210> 242
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 242
 Asp Val Ile Ile Thr Gln Gln Leu Pro Cys Glu Ala Glu Phe Val Arg
 1 5 10 15

Ser Asp Pro Ala
20

<210> 243
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 243
Thr Gln Gln Leu Pro Cys Glu Ala Glu Phe Val Arg Ser Asp Pro Ala
1 5 10 15
Thr Thr Pro Thr
20

<210> 244
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 244
Cys Glu Ala Glu Phe Val Arg Ser Asp Pro Ala Thr Thr Pro Thr Ala
1 5 10 15
Asp Gly Lys Leu
20

<210> 245
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 245
Val Arg Ser Asp Pro Ala Thr Thr Pro Thr Ala Asp Gly Lys Leu Val
1 5 10 15
Trp Lys Ile Asp
20

<210> 246
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Made in a lab

<400> 246
Ala Thr Thr Pro Thr Ala Asp Gly Lys Leu Val Trp Lys Ile Asp Arg
1 5 10 15
Leu Gly Gln Gly

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<210> 247
<211> 20
<212> PRT
<213> Artificial Sequence
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<400> 247
Ala Asp Gly Lys Leu Val Trp Lys Ile Asp Arg Leu Gly Gln Gly Glu
  1           5           10          15
Lys Ser Lys Ile
      20
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<220>
<223> Made in a lab

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<400> 248
Val Trp Lys Ile Asp Arg Leu Gly Gln Gly Glu Lys Ser Lys Ile Thr
  1             5             10            15
Val Trp Val Lys
      20
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<220>
<223> Made in a lab

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<400> 249
Arg Leu Gly Gln Gly Glu Lys Ser Lys Ile Thr Val Trp Val Lys Pro
  1             5             10             15
Leu Lys Glu Gly
           20
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<220>
<223> Made in a lab

<400> 250
Gly Glu Lys Ser Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly
1 5 10 15
Cys Cys Phe Thr
20

<210> 251
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 251
 Gly Glu Lys Ser Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly
 1 5 10 15

<210> 252
 <211> 12
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 252
 Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly
 1 5 10

<210> 253
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 253
 Gly Asp Lys Cys Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly
 1 5 10 15

<210> 254
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 254
 Thr Glu Tyr Pro Leu Leu Ala Asp Pro Ser Phe Lys Ile Ser Glu Ala
 1 5 10 15
 Phe Gly Val Leu
 20

<210> 255
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Made in a lab

<400> 255

Leu Ala Asp Pro Ser Phe Lys Ile Ser Glu Ala Phe Gly Val Leu Asn
 1 5 10 15
 Pro Glu Gly Ser
 20

<210> 256

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 256

Phe Lys Ile Ser Glu Ala Phe Gly Val Leu Asn Pro Glu Gly Ser Leu
 1 5 10 15
 Ala Leu Arg Ala
 20

<210> 257

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 257

Ala Phe Gly Val Leu Asn Pro Glu Gly Ser Leu Ala Leu Arg Ala Thr
 1 5 10 15
 Phe Leu Ile Asp
 20

<210> 258

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 258

Asn Pro Glu Gly Ser Leu Ala Leu Arg Ala Thr Phe Leu Ile Asp Lys
 1 5 10 15
 His Gly Val Ile
 20

<210> 259

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 259
 Leu Ala Leu Arg Ala Thr Phe Leu Ile Asp Lys His Gly Val Ile Arg
 1 5 10 15
 His Ala Val Ile
 20

<210> 260
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 260
 Thr Phe Leu Ile Asp Lys His Gly Val Ile Arg His Ala Val Ile Asn
 1 5 10 15
 Asp Leu Pro Leu
 20

<210> 261
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 261
 Lys His Gly Val Ile Arg His Ala Val Ile Asn Asp Leu Pro Leu Gly
 1 5 10 15
 Arg Ser Ile Asp
 20

<210> 262
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Made in a lab

<400> 262
 Arg His Ala Val Ile Asn Asp Leu Pro Leu Gly Arg Ser Ile Asp Glu
 1 5 10 15
 Glu Leu Arg Ile
 20

<210> 263
 <211> 897
 <212> DNA
 <213> Chlamydia

<220>
 <221> misc_feature
 <222> (1)...(897)

210 215 220
 Glu Glu Asn Ala Cys Glu Lys Lys Val Ala Gly Glu Lys Ala Lys Thr
 225 230 235 240
 Phe Thr Arg Ile Lys Tyr Ala Leu Leu Thr Met Leu Glu Lys Phe Leu
 245 250 255
 Glu Cys Val Ala Asp Val Phe Lys Leu Val Pro Leu Pro Ile Thr Met
 260 265 270
 Gly Ile Arg Ala Ile Val Ala Ala Gly Cys Thr Phe Thr Ser Ala Ile
 275 280 285
 Ile Gly Leu Cys Thr Phe Cys Ala Arg Ala
 290 295

<210> 265
 <211> 897
 <212> DNA
 <213> Chlamydia

<220>
 <221> misc_feature
 <222> (1)...(897)
 <223> n = A,T,C or G

<400> 265
 atggcttcta tatgcggacg tttaggggtct ggtacaggga atgctctaaa agcttttttt 60
 acacagccca acaataaaat ggcaagggtta gtaaataaga cgaagggaat ggataagact 120
 attaaggttg ccaagtctgc tgccgaattg accgcaaata ttttgaaca agctggaggc 180
 gcgggctctt ccgcacacat tacagcttcc caagtgtcca aaggattagg ggatgcgaga 240
 actgttgcg ctttagggaa tgccctttaac ggagcgttgc caggaacagt tcaaagtgcg 300
 caaagcttct tctctcacat gaaagctgct agtcagaaaa cgcaagaagg ggatgagggg 360
 ctcacagcag atctttgtgt gtctcataag cgcagagcgg ctgcggctgt ctgtagcatc 420
 atcggaggaa ttacctacct cgcgacattc ggagctatcc gtccgattct gtttgtcaac 480
 aaaatgctgg caaaaccgtt tctttcttcc caaactaaag caaatatggg atcttctggt 540
 agctatatta tggcggctaa ccattgcagcg tctgtggtgg gtgctggact cgctatcagt 600
 gcgnaaagag cagattgcga agcccgcgtc gctcgtattg cgagagaaga gtcgttactc 660
 gaagtgccgg gagaggaaaa tgcttgcgag aagaaagtcg ctggagagaa agccaagacg 720
 ttcacgcgca tcaagtatgc actcctcact atgctcgaga agtttttga atgcgttgcc 780
 gacgttttca aattgggtgcc gctgcctatt acaatgggta ttcgtgcgat tgtggctgct 840
 ggatgtacgt tcacttctgc aattattgga ttgtgcactt tctgcgccag agcataa 897

<210> 266
 <211> 298
 <212> PRT
 <213> Chlamydia

<220>
 <221> VARIANT
 <222> (1)...(298)
 <223> Xaa = Any Amino Acid

<400> 266
 Met Ala Ser Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu
 1 5 10 15
 Lys Ala Phe Phe Thr Gln Pro Asn Asn Lys Met Ala Arg Val Val Asn
 20 25 30
 Lys Thr Lys Gly Met Asp Lys Thr Ile Lys Val Ala Lys Ser Ala Ala
 35 40 45
 Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser


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<210> 267
<211> 680
<212> DNA
<213> Chlamydia
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<210> 268
<211> 359
<212> DNA
<213> Chlamydia
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<400> 268

cttatgttct	ggagaatggt	gcaacaacat	attaatcgaa	ccagctcctc	ctagtaacat	60
agaaaccaag	cccttttgag	aaaaaacctg	tacttcgcat	cctttagcca	tttggtgaat	120
agctcctaac	aaagagctaa	ttttttcctc	ttccttggtt	ttctgaggcg	ctgtggactc	180
taaatatagc	aagtgtctct	ggaacacctc	atcaacaatc	gcttgtccta	gattaggtat	240
agagactgtc	tctccatcaa	ttaaatggag	tttcaaagta	atatcccctt	ccgtccctcc	300
atcacaagac	tctatgaaag	ctatctgatt	ccatcgagca	gaaatgtatg	gggaaatac	359

<210> 269
 <211> 124
 <212> DNA
 <213> Chlamydia

<400> 269	
gatcgaatca	attgagggag
ggaataacaa	gaaataggta
gggt	

<210> 270
 <211> 219
 <212> DNA
 <213> Chlamydia

<400> 270	
gacacctgtg	ggcctagtaa
ataagagcac	ggatacgctt
cgctcttgct	caatgacata
ctcagacttg	ttggagagct

<210> 271
 <211> 511
 <212> DNA
 <213> Chlamydia

<220>
 <221> misc_feature
 <222> (1)...(511)
 <223> n = A,T,C or G

<400> 271	
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acaaagaggt	tttggcatag
tgttatcgat	agcttggttc
cctgttctcc	atagatagct
atggtgcggc	tgctgcggtc
ttgttgcgac	tcctgtggat
tcagattaga	aataattaca
tctctgttac	agataaggag
cctccaccta	tctctgtagc

<210> 272
 <211> 598
 <212> DNA
 <213> Chlamydia

<400> 272	
ctcttctctc	cctcaatcta
ctctggctca	aactcgata

ttatactgat	aagaatcttt	cgattactaa	catcacagga	attatcgaaa	ttgcaaataa	180
caaagcgaca	gatgttggag	gtggtgctta	cgtaaaagga	acccttactt	gtaaaaactc	240
tcaccgtcta	caatttttga	aaaactcttc	cgataaacia	ggtggaggaa	tctacggaga	300
agacaacatc	accctatcta	atttgacagg	gaagactcta	ttccaagaga	atactgccaa	360
aaaagagggc	ggtggactct	tcataaaaagg	tacagataaa	gctcttacia	tgacaggact	420
ggatagtttc	tgtttaatta	ataacacatc	agaaaaacat	ggtggtggga	gcctttgtta	480
ccaaagaaat	ctctcagact	tacacctctt	gatgtggaaa	caattccagg	aatcacgcct	540
gtacatggtg	aaacagtcac	tactggcaat	aaatctacag	gaggtaatgg	tgaggggc	598

<210> 273

<211> 126

<212> DNA

<213> Chlamydia

<400> 273

ggatccgaat	tcggcacgag	atgagcotta	tagtttaaca	aaagcttctc	acattccttc	60
gatagctttt	tattagccgt	ttttagcatc	ctaagagat	ctctcgttc	gtaacaaata	120
cgagag						126

<210> 274

<211> 264

<212> DNA

<213> Chlamydia

<400> 274

ggatccgaat	tcggcacgag	ctcttttaaa	tcttaattac	aaaaagacaa	attaattcaa	60
tttttcaaaa	aagaatttaa	acattaattg	ttgtaaaaaa	acaatatatta	ttctaaaata	120
ataaccatag	ttacggggga	atctctttca	tggtttatatt	tagagctcat	caacctaggc	180
atacgcttaa	aacattttcct	ttgaaagttc	accattcgtt	ctccgataag	catcctcaaa	240
ttgctaaagc	tatgtggatt	acgg				264

<210> 275

<211> 359

<212> DNA

<213> Chlamydia

<400> 275

ggatccgaat	tcggcacgag	ataaaacctg	aaccacaaca	aagatctaaa	acttcttgat	60
tttcagctgc	aaattctttt	agataaatat	caaccatttc	ttcagtttca	tatcttggaa	120
ttaaaacttg	ttctcttaaa	ttaattctag	tatttaagta	ttcaacatag	cccattatta	180
attgaattgg	ataattttgc	cttaataatt	cacattcttt	ttcagtaatt	ttaggttcta	240
aaccgtaccg	ctttttttct	aaaattaatg	tttcttcatt	attcatttta	taagccactt	300
tcctttatatt	tttgattttg	ttcttctggt	agtaatgctt	caataatagt	taataattt	359

<210> 276

<211> 357

<212> DNA

<213> Chlamydia

<400> 276

aaaacaattg	atataatttt	ttttttcata	acttccagac	tcctttctag	aaaagtcttt	60
atgggtagta	gtgactctaa	cgttttttat	tattaagacg	atccccggag	atccttttaa	120
tgatgaaaac	ggaaacatcc	tttcgccaga	aacttttagca	ctattaaaga	atcgttacgg	180
gtagataaag	cctttattca	cccagtatct	tatctatattg	aaatgtctgc	taacactaga	240
tttcgggggaa	tctcttatct	acaaagatcg	aaatctcagc	attattgctg	ccgctcttcc	300
atcttccgct	attcttggac	ttgaaagctt	gtgtttactc	gtgccgaatt	cggatcc	357

<210> 277
 <211> 505
 <212> DNA
 <213> Chlamydia

<400> 277
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 agcactaaaa gagactcctc ttcaagaacg agagtgttaag caggggtgagg aggaacttca 120
 ggtaaaaatc ctaaggccat accaggatgc gacaggaaag agatatctcc attaggagct 180
 cggagacacg ctgggttgtg gccacaagaa tagtattcta gttctcgtgt tgcgtaatga 240
 taacaataaa tgcatagtgt tacaacatc ccagattcag ctgtctgttg atagaagaga 300
 gcagctgttt gttgaacggc ttcttgaata gaggagagct cactcaaaaa ggtatgtaac 360
 atgtttttca ggaataagga gtaggcgcac gcattgactc ctttcccgga agcatcagca 420
 acgattagaa agagttagc ttggggacct tcgcctataa caaagatatc aaagaaatct 480
 cctcctaccg taactgcagg aatat 505

<210> 278
 <211> 407
 <212> DNA
 <213> Chlamydia

<400> 278
 ggatccgaat tccggcacgag aactactgag caaattgggt atccaacttc ctctttacga 60
 aagaaaaaca gaaggcattc tccataccaa gatttggtgc atcgacaata aaactccaat 120
 ctttggtctc gctaactgga gcggtgctgg tatgattaaa aactttgaag acctattcat 180
 ccttcgcccc attacagaga cacagcttca ggcttttatg gacgtctggt ctcttctaga 240
 aacaaatagc tcctatctgt cccagagag cgtgcttacg gcccctactc cttcaagtag 300
 acctactcaa caagatacag attctgatga cgaacaaccg agtaccagcc agcaagctat 360
 ccgtatgaga aaataggatt agggaaacaa aacgcacgca aaccaca 407

<210> 279
 <211> 351
 <212> DNA
 <213> Chlamydia

<400> 279
 ctctgtgccg ttacaggagg cttgtatcct ttaaaataga gttttttctta tgaccccatg 60
 tggcgatagg ccgggtctag cgcgatagc agaaatatcg gttgggtttt gtccttgagg 120
 ggatcgtata ctttttcaaa gtatgggtccc cgtatcgatt atctggaggc tcttatgtct 180
 ttttttcata ctagaaaata taagcttatc ctcagaggac tcttgtgttt agcaggctgt 240
 ttcttaaatga acagctgttc ctctagtoga ggaaatcaac ccgctgatga gagcatctat 300
 gtcttgtcta tgaatcgcat gatttgtgat tctcgtgccg aattcggatc c 351

<210> 280
 <211> 522
 <212> DNA
 <213> Chlamydia

<400> 280
 ggatccgaat tccggcacgag cagaggaaaa aggcgatact cctcttgaag atcgtttcac 60
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 tgattcttct tctgacgaaa ttctcgatgc gctcacaagt aaattttctg atcccacaat 180
 aaaggatcta gctcttgatt atctaattca aatagctccc tctgatggga aacttaagtc 240
 cgctctcatt caggcaaagc atcaactgat gagccagaat cctcaggcga ttgttgagg 300
 acgcaatgtt ctgttagctt cagaaacctt tgcttccaga gcaaatacat ctcttcatc 360
 gcttcgctcc ttatatctcc aagtaacctc atccccctct aattgcgcta atttacatca 420
 aatgcttgct tcttactcgc catcagagaa aaccgctgtt atggagtttc tagtgaatgg 480

catggttagca gattttaaatt cggagggccc ttccattcct cc

522

<210> 281
<211> 577
<212> DNA
<213> Chlamydia

<400> 281
ggatccgaat tccggcacgag atgcttctat tacaattggg ttggatgcgg aaaaagctta 60
ccagcttatt ctagaaaagt tgggagatca aattcttggg ggaattgctg atactattgt 120
tgatagtaca gtccaagata ttttagacaa aatcacaaca gacccttctc taggtttgtt 180
gaaagctttt aacaactttc caatcactaa taaaattcaa tgcaacgggt tattcactcc 240
caggaacatt gaaactttat taggaggaac tgaaatagga aaattcacag tcacacccaa 300
aagctctggg agcatgttct tagtctcagc agatattatt gcatcaagaa tgggaaggcg 360
cgttgttcta gctttgttac gagaagggtga ttctaagccc tacgcgatta gttatggata 420
ctcatcaggc gttcctaatt tatgtagtct aagaaccaga attattaata caggattgac 480
tccgacaacg tattcattac gtgtaggcgg tttagaaagc ggtgtggtat gggttaatgc 540
cctttctaatt ggcaatgata ttttaggaat aacaaat 577

<210> 282
<211> 607
<212> DNA
<213> Chlamydia

<400> 282
actmatcttc cccgggctcg agtgccggcg caagcttgct gacggagctc gatacaaaaa 60
tgtgtgcgtg tgaaccgctt cttcaaaagc ttgtcttaaa agatattgtc tcgcttccgg 120
attagttaca tgtttaaaaa ttgctagaac aatattattc ccaaccaagc tctctgcggt 180
gotgaaaaaa cctaaattca aaagaatgac tcgccgctca tcttcagaaa gacgatccga 240
cttcataat tcgatgtctt tccccatggg gatctctgta gggagccagt tatttgcgca 300
gccattcaaa taatgttccc aagcccattt gtacttaata ggaacaagtt ggttgacatc 360
gacctgggtg cagttcacta gacgcttgct atttagatta acgctgttct gttttccatc 420
taaaatatct gcttgcataa gaaccgttaa ttttattggt aatttatatg attaatct 480
gacatgcttc acacccttct tccaaagaac agacaggtgc tttcttgcgt ctttcaacaa 540
taattcctgc cgaagcagac ttattcttca tccaacgagg ctgaattcct ctcttattaa 600
tatctac 607

<210> 283
<211> 1077
<212> DNA
<213> Chlamydia

<400> 283
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caatcgaaac taaatgtgag agagcatgtg aagactccaa tgcaggaata atccctcat 120
ttctagtaag caggaaaaaa gctcgtaacg cctcttcatac ggtggctaata gtataaaagg 180
ctcgtcctga ctcattgcatt tcggcatgat ctggcccaac tgaaggataa totaatccag 240
cggaaatgga gtgagtttgt aatacttgct catcgtcatc ttgaagaaga tacgaataaa 300
atccgtggaa tactccaggt cgcctgttg caaaacgtgc tgcattgttt cctgaagaaa 360
tgcccagtc tcccccttcc actccaatta attggacttt tggattcggg ataaaatgat 420
ggaaaaatcc aatagcgttg gagccacctc cgatacatgc aatcagaata tcaggatctc 480
ttcctgcaac tgcattggatt tgctctttca cttcagcgtc tataacagac tgaaaaaatc 540
gaacgatata gggataagg aaaggtccta aggccgatcc taagcaatag tgagtaaatg 600
agtgtgttgt tgcccaatct tgtagagctt gattaactgc atctttgagt ccacaagatc 660
cttttgttac agaaacgact tcagcaccta aaaagcgcac tttctctaca tttggtttct 720
gtcgttccac atcttttgc cccatgtata ctacacaatc taatcctaga taagcacacg 780
ctgttgctgt tgctactcca tgttgtccc cactgtttc agctacaaca cgtgttttcc 840

caagatat	ttt	agcaagcaaa	cactgaccaa	gagcattatt	cagtttatgt	gctcctgtat	900
gcaaaaagatc	ttcgcgttta	agaaatactc	tagggccatc	aatagctcga	gcaaaaattct		960
taacttcagt	cagaggagtt	tgtctccccg	catagttttt	caaaatacaa	tctagttcag		1020
ataaaaaaact	ttgctgagtt	ttgagaatct	cccattccgc	ttttagattc	tgtatag		1077

<210> 284
 <211> 407
 <212> DNA
 <213> Chlamydia

<400> 284							
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aagaaaaaca	gaaggcattc	tccataccaa	gatttggtgc	atcgacaata	aaactccaat		120
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ccttcgcccc	attacagaga	cacagcttca	ggcctttatg	gacgtctggt	ctcttctaga		240
aacaaatagc	tcctatctgt	ccccagagag	cgtgcttaag	gcccctactc	cttcaagtag		300
acctactcaa	caagatacag	attctgatga	cgaacaaccg	agtaccagcc	agcaagctat		360
ccgtatgaga	aaataggatt	agggaaacaa	aacgacagca	aaccaca			407

<210> 285
 <211> 802
 <212> DNA
 <213> Chlamydia

<400> 285							
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taattctaca	ggcacaattg	gaatcgttaa	tttacgtcgc	tgcctagaag	agtctgctct		120
tgggaaaaaa	gaatctgctg	aattcgaaaa	gatgaaaaac	caattctcta	acagcatggg		180
gaagatggag	gaagaactgt	cttctatcta	ttccaagctc	caagacgacg	attacatgga		240
aggtctatcc	gagaccgcag	ctgccgaatt	aagaaaaaaa	ttcgaagatc	tatctgcaga		300
atacaacaca	gctcaagggc	agtattacca	aatattaaac	caaagtaatc	tcaagcgcat		360
gcaaaagatt	atggaagaag	tgaaaaaagc	ttctgaaact	gtgcgatttc	aagaaggctt		420
gtcagtcctt	cttaacgaag	atattgtctt	atctatcgat	agttcggcag	ataaaaccga		480
tgctgttatt	aaagttcttg	atgattcttt	tcaaaataat	taacatgcga	agctagccga		540
ggagtgccgt	atgtctcaat	ccacttattc	tottgaacaa	ttagctgatt	ttttgaaagt		600
cgagtttcaa	ggaaatggag	ctactcttct	ttccggagtt	gaagagatcg	aggaagcaaa		660
aacggcacac	atcacattct	tagataatga	aaaatatgct	aaacatttaa	aatcatcgga		720
agctggcgct	atcatcatat	ctcgaacaca	gtttcaaaaa	tatcgagact	tgaataaaaa		780
ctttcttatt	acttctgagt	ct					802

<210> 286
 <211> 588
 <212> DNA
 <213> Chlamydia

<400> 286							
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aaggtcttct	aataaggaag	ttaatgtaag	aggctttttt	attgcttttc	gtaaggtagt		120
attgcaaccg	cacgcgattg	aatgatacgc	aagccatttc	catcatggaa	aagaaccctt		180
ggacaaaaat	acaaaggagg	ttcactccta	accagaaaaa	gggagagtta	gtttccatgg		240
gttttcctta	tataaccccg	tttcacacaa	ttaggagcgc	cgtctagtat	ttggaataca		300
aattgtcccc	aagcgaattt	tgttctctgt	tcagggtatt	ctcctaattg	ttctgtcagc		360
catccgccta	tggtaacgca	attagctgta	gtaggaagat	caactccaaa	caggtcatag		420
aaatcagaaa	gctcataggt	gcctgcagca	ataacaacat	tcttgtctga	gtgagcgaat		480
tgtttaaaag	atgggcgatt	atgagctacc	tcatacagaga	ctatttttaa	tagatcattt		540
tgggtaaatca	atccttctat	agacccatat	tcatacaatga	taatctctg			588

<210> 287
 <211> 489
 <212> DNA
 <213> Chlamydia

<220>
 <221> misc_feature
 <222> (1)..(489)
 <223> n = A,T,C or G

<400> 287
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 acaagtagct gttatgtatg gttctagttg cttactgcgc gccgtgggcg atttagcgaa 120
 aaatgattct tctattcaag tacgcatcac tgcttatcgt gctgcagccg tgttgagat 180
 acaagatctt gtgcctcatt tacgagttgt agtccaaaat acacaattag atggaacgga 240
 aagaagagaa gcttgagatg ctttatgtgt tcttactcgg cctcatagtg gtgtattaac 300
 tggcatagat caagctttaa tgacctgtga gatgttaaag gaatatcctg aaaagtgtac 360
 ggaagaacag attcgtacat tattggctgc agatcatcca gaagtgcagg tagctacttt 420
 acagatcatt ctgagaggag gtagagtatt ccggtcatct tctataatgg aatcggttct 480
 cgtgccgnt 489

<210> 288
 <211> 191
 <212> DNA
 <213> Chlamydia

<400> 288
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 gacgactttg tagataacgc taggagctgt agcaataata tcgagatcaa attctctaga 120
 gattctctca aagatgattt ctaagtgcag cagtcctaaa aatccacagc ggaacccaaa 180
 tccgagagag t 191

<210> 289
 <211> 515
 <212> DNA
 <213> Chlamydia

<400> 289
 ggatccgaat tcggcacgag gagcgacgtg aaatagtggg atcttcccgt attcttatta 60
 cttctgcgtt gccttacgca aatgggtcctt tgcatttttg acatattacc ggtgcttatt 120
 tgcttgcaga tgtttatgag cgttttcaga gactacaagg caaagagggt ttgtatattt 180
 gtggttctga tgaatacggg atcgcaatta cccttaaatgc agagttggca ggcattgggt 240
 atcaagaata tgtcgacatg tatcataagc ttcataaaga taccttcaag aaattgggaa 300
 tttctgtaga tttcttttcc agaactacga acgcttatca tctgtctatt gtgcaagatt 360
 tctatcgaaa cttgcaggaa cgcggaactg tagagaatca ggtgaccgaa cagctgtatt 420
 ctgaggaaga agggaagttt ttagcggacc gttatgttgt aggtacttgt cccaagtgtg 480
 ggtttgatcg agctcgagga gatgagtgtc agcag 515

<210> 290
 <211> 522
 <212> DNA
 <213> Chlamydia

<400> 290
 ggatccgaat tcggcacgag ggaggaatgg aagggccctc cgattktama tctgctacca 60
 tgccattcac tagaaactcc ataacagcgg ttttctctga tggcgagtaa gaagcaagca 120
 tttgatgtaa attagcgcaa ttagaggggg atgaggttac ttggaaatat aaggagcgaa 180

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gcgatgaagg agatgtatatt gctctggaag caaagggtttc tgaagctaac agaacattgc 240
gtcctccaac aatcgccctga ggattctggc tcatcagttg atgctttgcc tgaatgagag 300
cggacttaag tttcccatca gagggagcta tttgaattag ataatacaaga gctagatcct 360
ttattgtggg atcagaaaat ttacttgtga gcgcacgcag aatttcgtca gaagaagaat 420
catcatcgaa cgaatttttc aatcctcgaa aatcttctcc agagacttcg gaaagatcct 480
ctgtgaaacg atcttcaaga ggagtatcgc ctttttccyc tg 522

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<210> 291
 <211> 1002
 <212> DNA
 <213> Chlamydia

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<400> 291
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gccaaagaac cagcggctgt cagctccttt gctcagaaag ggattttattg tattcaacaa 120
ttttttacaa accctgggaa taagttagca aagttttagat gggcaacaaa aagtttagat 180
aaatgcttta agctaagtaa ggcggtttct gactgtgtcg taggatcgct ggaagaggcg 240
ggatgcacag gggacgcatt gacctccgcg agaaacgccc agggtatgtt aaaaacaact 300
cgagaagttg ttgccttagc taatgtgctc aatggagctg ttccatctat cgtttaactcg 360
actcagaggt gttaccaata cacacgtcaa gccttcgagt taggaagcaa gacaaaagaa 420
agaaaaacgc ctggggagta tagtaaaatg ctattaactc gaggtgatta cctattggca 480
gcttccaggg aagcttgtac ggcatcggt gcaacgactt actcagcgac attcgggtgtt 540
ttacgtccgt taatgttaat caataaactc acagcaaaac cattcttaga caaagcgact 600
gtaggcaatt ttggcacggc tgttgcgtga attatgacca ttaatcatat ggcaggagtt 660
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ctatacaatg agagatgtgc cttagaaaac caacaatctc agttgagtgg ggacgtgatt 780
ctaagcgcgg aaagggcatt acgtaaagaa cagcttgcta ctctaaaaag aaatgtttta 840
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attacagtgg cttgctccgc tgcaatttct ggagccttga cggcagcatc cgcaggaatt 960
ggcttatata gcatatggca gaaaacaaag tctggcaaat aa 1002

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<210> 292
 <211> 333
 <212> PRT
 <213> Chlamydia

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<400> 292
Met Ala Thr Asn Ala Ile Arg Ser Ala Gly Ser Ala Ala Ser Lys Met
1 5 10 15
Leu Leu Pro Val Ala Lys Glu Pro Ala Ala Val Ser Ser Phe Ala Gln
20 25 30
Lys Gly Ile Tyr Cys Ile Gln Gln Phe Phe Thr Asn Pro Gly Asn Lys
35 40 45
Leu Ala Lys Phe Val Gly Ala Thr Lys Ser Leu Asp Lys Cys Phe Lys
50 55 60
Leu Ser Lys Ala Val Ser Asp Cys Val Val Gly Ser Leu Glu Glu Ala
65 70 75 80
Gly Cys Thr Gly Asp Ala Leu Thr Ser Ala Arg Asn Ala Gln Gly Met
85 90 95
Leu Lys Thr Thr Arg Glu Val Val Ala Leu Ala Asn Val Leu Asn Gly
100 105 110
Ala Val Pro Ser Ile Val Asn Ser Thr Gln Arg Cys Tyr Gln Tyr Thr
115 120 125
Arg Gln Ala Phe Glu Leu Gly Ser Lys Thr Lys Glu Arg Lys Thr Pro
130 135 140
Gly Glu Tyr Ser Lys Met Leu Leu Thr Arg Gly Asp Tyr Leu Leu Ala
145 150 155 160

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Phe Gly Val Leu Asn Pro Glu Gly Ser Leu Ala Leu Arg Ala Thr Phe
 115 120 125
 Leu Ile Asp Lys His Gly Val Ile Arg His Ala Val Ile Asn Asp Leu
 130 135 140
 Pro Leu Gly Arg Ser Ile Asp Glu Glu Leu Arg Ile Leu Asp Ser Leu
 145 150 155 160
 Ile Phe Phe Glu Asn His Gly Met Val Cys Pro Ala Asn Trp Arg Ser
 165 170 175
 Gly Glu Arg Gly Met Val Pro Ser Glu Glu Gly Leu Lys Glu Tyr Phe
 180 185 190
 Gln Thr Met Asp
 195

<210> 295
 <211> 181
 <212> PRT
 <213> Chlamydia

<400> 295
 Lys Gly Gly Lys Met Ser Thr Thr Ile Ser Gly Asp Ala Ser Ser Leu
 5 10 15
 Pro Leu Pro Thr Ala Ser Cys Val Glu Thr Lys Ser Thr Ser Ser Ser
 20 25 30
 Thr Lys Gly Asn Thr Cys Ser Lys Ile Leu Asp Ile Ala Leu Ala Ile
 35 40 45
 Val Gly Ala Leu Val Val Val Ala Gly Val Leu Ala Leu Val Leu Cys
 50 55 60
 Ala Ser Asn Val Ile Phe Thr Val Ile Gly Ile Pro Ala Leu Ile Ile
 65 70 75 80
 Gly Ser Ala Cys Val Gly Ala Gly Ile Ser Arg Leu Met Tyr Arg Ser
 85 90 95
 Ser Tyr Ala Ser Leu Glu Ala Lys Asn Val Leu Ala Glu Gln Arg Leu
 100 105 110
 Arg Asn Leu Ser Glu Glu Lys Asp Ala Leu Ala Ser Val Ser Phe Ile
 115 120 125
 Asn Lys Met Phe Leu Arg Gly Leu Thr Asp Asp Leu Gln Ala Leu Glu
 130 135 140
 Ala Lys Val Met Glu Phe Glu Ile Asp Cys Leu Asp Arg Leu Glu Lys
 145 150 155 160
 Asn Glu Gln Ala Leu Leu Ser Asp Val Arg Leu Val Leu Ser Ser Tyr

165

170

175

Thr Arg Trp Leu Asp
180

<210> 296
<211> 124
<212> PRT
<213> Chlamydia

<400> 296
Ile Tyr Glu Val Met Asn Met Asp Leu Glu Thr Arg Arg Ser Phe Ala
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Val Gln Gln Gly His Tyr Gln Asp Pro Arg Ala Ser Asp Tyr Asp Leu
20 25 30
Pro Arg Ala Ser Asp Tyr Asp Leu Pro Arg Ser Pro Tyr Pro Thr Pro
35 40 45
Pro Leu Pro Ser Arg Tyr Gln Leu Gln Asn Met Asp Val Glu Ala Gly
50 55 60
Phe Arg Glu Ala Val Tyr Ala Ser Phe Val Ala Gly Met Tyr Asn Tyr
65 70 75 80
Val Val Thr Gln Pro Gln Glu Arg Ile Pro Asn Ser Gln Gln Val Glu
85 90 95
Gly Ile Leu Arg Asp Met Leu Thr Asn Gly Ser Gln Thr Phe Ser Asn
100 105 110
Leu Met Gln Arg Trp Asp Arg Glu Val Asp Arg Glu
115 120

<210> 297
<211> 488
<212> PRT
<213> Chlamydia

<400> 297
Lys Gly Ser Leu Pro Ile Leu Gly Pro Phe Leu Asn Gly Lys Met Gly
5 10 15
Phe Trp Arg Thr Ser Ile Met Lys Met Asn Arg Ile Trp Leu Leu Leu
20 25 30
Leu Thr Phe Ser Ser Ala Ile His Ser Pro Val Arg Gly Glu Ser Leu
35 40 45
Val Cys Lys Asn Ala Leu Gln Asp Leu Ser Phe Leu Glu His Leu Leu
50 55 60
Gln Val Lys Tyr Ala Pro Lys Thr Trp Lys Glu Gln Tyr Leu Gly Trp
65 70 75 80

Tyr Phe Leu Met Glu Asn Cys Val Asn Leu Phe Val
130 135 140

<210> 299
 <211> 361
 <212> PRT
 <213> Chlamydia

<400> 299

His	Gln	Glu	Ile	Ala	Asp	Ser	Pro	Leu	Val	Lys	Lys	Ala	Glu	Glu	Gln
				5					10					15	
Ile	Asn	Gln	Ala	Gln	Gln	Asp	Ile	Gln	Thr	Ile	Thr	Pro	Ser	Gly	Leu
			20					25					30		
Asp	Ile	Pro	Ile	Val	Gly	Pro	Ser	Gly	Ser	Ala	Ala	Ser	Ala	Gly	Ser
		35					40					45			
Ala	Ala	Gly	Ala	Leu	Lys	Ser	Ser	Asn	Asn	Ser	Gly	Arg	Ile	Ser	Leu
	50					55					60				
Leu	Leu	Asp	Asp	Val	Asp	Asn	Glu	Met	Ala	Ala	Ile	Ala	Met	Gln	Gly
	65				70				75					80	
Phe	Arg	Ser	Met	Ile	Glu	Gln	Phe	Asn	Val	Asn	Asn	Pro	Ala	Thr	Ala
				85					90					95	
Lys	Glu	Leu	Gln	Ala	Met	Glu	Ala	Gln	Leu	Thr	Ala	Met	Ser	Asp	Gln
			100					105					110		
Leu	Val	Gly	Ala	Asp	Gly	Glu	Leu	Pro	Ala	Glu	Ile	Gln	Ala	Ile	Lys
		115					120					125			
Asp	Ala	Leu	Ala	Gln	Ala	Leu	Lys	Gln	Pro	Ser	Ala	Asp	Gly	Leu	Ala
		130				135					140				
Thr	Ala	Met	Gly	Gln	Val	Ala	Phe	Ala	Ala	Ala	Lys	Val	Gly	Gly	Gly
	145				150					155					160
Ser	Ala	Gly	Thr	Ala	Gly	Thr	Val	Gln	Met	Asn	Val	Lys	Gln	Leu	Tyr
				165					170					175	
Lys	Thr	Ala	Phe	Ser	Ser	Thr	Ser	Ser	Ser	Ser	Tyr	Ala	Ala	Ala	Leu
			180					185					190		
Ser	Asp	Gly	Tyr	Ser	Ala	Tyr	Lys	Thr	Leu	Asn	Ser	Leu	Tyr	Ser	Glu
		195					200					205			
Ser	Arg	Ser	Gly	Val	Gln	Ser	Ala	Ile	Ser	Gln	Thr	Ala	Asn	Pro	Ala
	210					215					220				
Leu	Ser	Arg	Ser	Val	Ser	Arg	Ser	Gly	Ile	Glu	Ser	Gln	Gly	Arg	Ser
	225				230					235					240
Ala	Asp	Ala	Ser	Gln	Arg	Ala	Ala	Glu	Thr	Ile	Val	Arg	Asp	Ser	Gln
				245					250					255	
Thr	Leu	Gly	Asp	Val	Tyr	Ser	Arg	Leu	Gln	Val	Leu	Asp	Ser	Leu	Met
			260					265					270		

Ser Thr Ile Val Ser Asn Pro Gln Ala Asn Gln Glu Glu Ile Met Gln
 275 280 285

Lys Leu Thr Ala Ser Ile Ser Lys Ala Pro Gln Phe Gly Tyr Pro Ala
 290 295 300

Val Gln Asn Ser Val Asp Ser Leu Gln Lys Phe Ala Ala Gln Leu Glu
 305 310 315 320

Arg Glu Phe Val Asp Gly Glu Arg Ser Leu Ala Glu Ser Gln Glu Asn
 325 330 335

Ala Phe Arg Lys Gln Pro Ala Phe Ile Gln Gln Val Leu Val Asn Ile
 340 345 350

Ala Ser Leu Phe Ser Gly Tyr Leu Ser
 355 360

<210> 300
 <211> 207
 <212> PRT
 <213> Chlamydia

<400> 300
 Ser Ser Lys Ile Val Ser Leu Cys Glu Gly Ala Val Ala Asp Ala Arg
 5 10 15

Met Cys Lys Ala Glu Leu Ile Lys Lys Glu Ala Asp Ala Tyr Leu Phe
 20 25 30

Cys Glu Lys Ser Gly Ile Tyr Leu Thr Lys Lys Glu Gly Ile Leu Ile
 35 40 45

Pro Ser Ala Gly Ile Asp Glu Ser Asn Thr Asp Gln Pro Phe Val Leu
 50 55 60

Tyr Pro Lys Asp Ile Leu Gly Ser Cys Asn Arg Ile Gly Glu Trp Leu
 65 70 75 80

Arg Asn Tyr Phe Arg Val Lys Glu Leu Gly Val Ile Ile Thr Asp Ser
 85 90 95

His Thr Thr Pro Met Arg Arg Gly Val Leu Gly Ile Gly Leu Cys Trp
 100 105 110

Tyr Gly Phe Ser Pro Leu His Asn Tyr Ile Gly Ser Leu Asp Cys Phe
 115 120 125

Gly Arg Pro Leu Gln Met Thr Gln Ser Asn Leu Val Asp Ala Leu Ala
 130 135 140

Val Ala Ala Val Val Cys Met Gly Glu Gly Asn Glu Gln Thr Pro Leu
 145 150 155 160

Ala Val Ile Glu Gln Ala Pro Asn Met Val Tyr His Ser Tyr Pro Thr
 165 170 175

Ser Arg Glu Glu Tyr Cys Ser Leu Arg Ile Asp Glu Thr Glu Asp Leu
180 185 190

Tyr Gly Pro Phe Leu Gln Ala Val Thr Trp Ser Gln Glu Lys Lys
195 200 205

<210> 301
<211> 183
<212> PRT
<213> Chlamydia

<400> 301
Ile Pro Pro Ala Pro Arg Gly His Pro Gln Ile Glu Val Thr Phe Asp
5 10 15

Ile Asp Ala Asn Gly Ile Leu His Val Ser Ala Lys Asp Ala Ala Ser
20 25 30

Gly Arg Glu Gln Lys Ile Arg Ile Glu Ala Ser Ser Gly Leu Lys Glu
35 40 45

Asp Glu Ile Gln Gln Met Ile Arg Asp Ala Glu Leu His Lys Glu Glu
50 55 60

Asp Lys Gln Arg Lys Glu Ala Ser Asp Val Lys Asn Glu Ala Asp Gly
65 70 75 80

Met Ile Phe Arg Ala Glu Lys Ala Val Lys Asp Tyr His Asp Lys Ile
85 90 95

Pro Ala Glu Leu Val Lys Glu Ile Glu Glu His Ile Glu Lys Val Arg
100 105 110

Gln Ala Ile Lys Glu Asp Ala Ser Thr Thr Ala Ile Lys Ala Ala Ser
115 120 125

Asp Glu Leu Ser Thr Arg Met Gln Lys Ile Gly Glu Ala Met Gln Ala
130 135 140

Gln Ser Ala Ser Ala Ala Ala Ser Ser Ala Ala Asn Ala Gln Gly Gly
145 150 155 160

Pro Asn Ile Asn Ser Glu Asp Leu Lys Lys His Ser Phe Ser Thr Arg
165 170 175

Pro Pro Ala Gly Gly Ser Ala
180

<210> 302
<211> 232
<212> PRT
<213> Chlamydia

<400> 302

Met Thr Lys His Gly Lys Arg Ile Arg Gly Ile Gln Glu Thr Tyr Asp
5 10 15

Leu Ala Lys Ser Tyr Ser Leu Gly Glu Ala Ile Asp Ile Leu Lys Gln
20 25 30

Cys Pro Thr Val Arg Phe Asp Gln Thr Val Asp Val Ser Val Lys Leu
35 40 45

Gly Ile Asp Pro Arg Lys Ser Asp Gln Gln Ile Arg Gly Ser Val Ser
50 55 60

Leu Pro His Gly Thr Gly Lys Val Leu Arg Ile Leu Val Phe Ala Ala
65 70 75 80

Gly Asp Lys Ala Ala Glu Ala Ile Glu Ala Gly Ala Asp Phe Val Gly
85 90 95

Ser Asp Asp Leu Val Glu Lys Ile Lys Gly Gly Trp Val Asp Phe Asp
100 105 110

Val Ala Val Ala Thr Pro Asp Met Met Arg Glu Val Gly Lys Leu Gly
115 120 125

Lys Val Leu Gly Pro Arg Asn Leu Met Pro Thr Pro Lys Ala Gly Thr
130 135 140

Val Thr Thr Asp Val Val Lys Thr Ile Ala Glu Leu Arg Lys Gly Lys
145 150 155 160

Ile Glu Phe Lys Ala Asp Arg Ala Gly Val Cys Asn Val Gly Val Ala
165 170 175

Lys Leu Ser Phe Asp Ser Ala Gln Ile Lys Glu Asn Val Glu Ala Leu
180 185 190

Cys Ala Ala Leu Val Lys Ala Lys Pro Ala Thr Ala Lys Gly Gln Tyr
195 200 205

Leu Val Asn Phe Thr Ile Ser Ser Thr Met Gly Pro Gly Val Thr Val
210 215 220

Asp Thr Arg Glu Leu Ile Ala Leu
225 230

<210> 303
<211> 238
<212> PRT
<213> chlamydia

<400> 303
Ile Asn Ser Lys Leu Glu Thr Lys Asn Leu Ile Tyr Leu Lys Leu Lys
5 10 15

Ile Lys Lys Ser Phe Lys Met Gly Asn Ser Gly Phe Tyr Leu Tyr Asn
20 25 30

Gln Ala Gly Gly Ala Gly Ser Ser Ala His Ile Thr Ala Ser Gln Val
 65 70 75 80
 Ser Lys Gly Leu Gly Asp Thr Arg Thr Val Val Ala Leu Gly Asn Ala
 85 90 95
 Phe Asn Gly Ala Leu Pro Gly Thr Val Gln Ser Ala Gln Ser Phe Phe
 100 105 110
 Ser His Met Lys Ala Ala Ser Gln Lys Thr Gln Glu Gly Asp Glu Gly
 115 120 125
 Leu Thr Ala Asp Leu
 130

<210> 305
 <211> 125
 <212> PRT
 <213> Chlamydia

<400> 305
 Met Ala Ser Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu
 5 10 15
 Lys Ala Phe Phe Thr Gln Pro Ser Asn Lys Met Ala Arg Val Val Asn
 20 25 30
 Lys Thr Lys Gly Met Asp Lys Thr Val Lys Val Ala Lys Ser Ala Ala
 35 40 45
 Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser
 50 55 60
 Ala His Ile Thr Ala Ser Gln Val Ser Lys Gly Leu Gly Asp Thr Arg
 65 70 75 80
 Thr Val Val Ala Leu Gly Asn Ala Phe Asn Gly Ala Leu Pro Gly Thr
 85 90 95
 Val Gln Ser Ala Gln Ser Phe Phe Ser His Met Lys Ala Ala Ser Gln
 100 105 110
 Lys Thr Gln Glu Gly Asp Glu Gly Leu Thr Ala Asp Leu
 115 120 125

<210> 306
 <211> 38
 <212> DNA
 <213> Chlamydia trachomatis

<400> 306
 gagagcggcc gctcatgttt ataacaaagg aacttatg

<210> 307
 <211> 39
 <212> DNA
 <213> Chlamydia trachomatis

<400> 307
 gagagcggcc gcttacttag gtgagaagaa gggagtttc 39

<210> 308
 <211> 1860
 <212> DNA
 <213> Chlamydia trachomatis

<400> 308
 atgcatcacc atcaccatca cacggccgcg tccgataact tccagctgtc ccaggggtggg 60
 cagggattcg ccattccgat cgggcaggcg atggcgatcg cgggccagat caagcttccc 120
 accgttcata tcgggcctac cgccttcctc ggcttgggtg ttgtcgacaa caacggcaac 180
 ggcgcacgag tccaacgcgt ggtcgggagc gctccggcgg caagtctcgg catctccacc 240
 ggcgacgtga tcaccgcggt cgacggcgct ccgatcaact cggccaccgc gatggcggac 300
 gcgcttaacg ggcacatcc cgggtgacgtc atctcgggtga cctggcaaac caagtcgggc 360
 ggcacgcgta caggaacgt gacattggcc gagggacccc cggccgaatt ctgcagatat 420
 ccatacact ggcggccgct catgtttata acaaaggaaac ttatgaatcg agttatagaa 480
 atccatgctc actacgatca aagacaactt tctcaatctc caaatacaaaa cttcttagta 540
 catcatcctt atcttactct tattcccaag tttctactag gagctctaatt cgtctatgct 600
 ccttattcgt ttgcagaaat ggaattagct atttctggac ataaacaagg taaagatcga 660
 gataccttta ccatgatctc ttctgtcctt gaaggcacta attacatcat caatcgcaaa 720
 ctcatactca gtgatttctc gttactaaat aaagtttcat cagggggagc ctttcggaat 780
 ctagcagga aaatttcctt cttaggaaaa aattcttctg cgtccattca ttttaaacac 840
 attaatatca atggttttgg agccggagtc ttttctgaat cctctattga atttactgat 900
 ttacgaaaac ttgttgcttt tggatctgaa agcacaggag gaatttttac tgcgaaagag 960
 gacatctctt ttaaaaacaa ccaccacatt gccttcgcga ataatatcac caaagggaat 1020
 ggtggcggtta tccagctcca aggagatatg aaaggaagcg tatcctttgt agatcaacgt 1080
 ggagctatca tctttaccaa taaccaagct gtaacttctt catcaatgaa acatagtggg 1140
 cgtggaggag caattagcgg tgacttcgca ggatccagaa ttctttttct taataaccaa 1200
 caaattactt tcgaaggcaa tagcgtctgt catggagggt ctatctacaa taagaatggc 1260
 cttgtcgagt tcttaggaaa tgcaggacct cttgccttta aagagaacac aacaatagct 1320
 aacgggggag ctatatacac aagtaatttc aaagcgaatc aacaaacatc cccatttcta 1380
 ttctctcaaa atcatgcgaa taagaaaggc ggagcgattt acgcgcaata tgtgaactta 1440
 gaacagaatc aagatactat tcgctttgaa aaaaataaccg ctaaagaagg cggtaggagc 1500
 atcacctctt ctcaatgctc aattactgct cataatacca tcaacttttc cgataatgct 1560
 gccggagatc ttggaggagg agcaattctt ctagaaggga aaaaaccttc tctaaccttg 1620
 attgctcata gtggtaatat tgcatttagc ggcaatacca tgcttcatat caccaaaaaa 1680
 gcttccctag atcgacacaa ttctatctta atcaaagaag ctccctataa aatccaactt 1740
 gcagcgaaca aaaaccattc tattcatttc tttgatcctg tcatggcatt gtcagcatca 1800
 tcttccccta tacaatcaa tgctcctgag tatgaaactc ccttcttctc acctaagtaa 1860

<210> 309
 <211> 619
 <212> PRT
 <213> Chlamydia trachomatis

<400> 309
 Met His His His His His Thr Ala Ala Ser Asp Asn Phe Gln Leu
 1 5 10 15
 Ser Gln Gly Gly Gln Gly Phe Ala Ile Pro Ile Gly Gln Ala Met Ala
 20 25 30
 Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala

		35					40					45				
Phe	Leu	Gly	Leu	Gly	Val	Val	Asp	Asn	Asn	Gly	Asn	Gly	Ala	Arg	Val	
	50					55					60					
Gln	Arg	Val	Val	Gly	Ser	Ala	Pro	Ala	Ala	Ser	Leu	Gly	Ile	Ser	Thr	
65					70					75					80	
Gly	Asp	Val	Ile	Thr	Ala	Val	Asp	Gly	Ala	Pro	Ile	Asn	Ser	Ala	Thr	
				85					90					95		
Ala	Met	Ala	Asp	Ala	Leu	Asn	Gly	His	His	Pro	Gly	Asp	Val	Ile	Ser	
			100					105					110			
Val	Thr	Trp	Gln	Thr	Lys	Ser	Gly	Gly	Thr	Arg	Thr	Gly	Asn	Val	Thr	
		115					120					125				
Leu	Ala	Glu	Gly	Pro	Pro	Ala	Glu	Phe	Cys	Arg	Tyr	Pro	Ser	His	Trp	
	130					135					140					
Arg	Pro	Leu	Met	Phe	Ile	Thr	Lys	Glu	Leu	Met	Asn	Arg	Val	Ile	Glu	
145					150					155					160	
Ile	His	Ala	His	Tyr	Asp	Gln	Arg	Gln	Leu	Ser	Gln	Ser	Pro	Asn	Thr	
				165					170					175		
Asn	Phe	Leu	Val	His	His	Pro	Tyr	Leu	Thr	Leu	Ile	Pro	Lys	Phe	Leu	
			180					185					190			
Leu	Gly	Ala	Leu	Ile	Val	Tyr	Ala	Pro	Tyr	Ser	Phe	Ala	Glu	Met	Glu	
		195					200					205				
Leu	Ala	Ile	Ser	Gly	His	Lys	Gln	Gly	Lys	Asp	Arg	Asp	Thr	Phe	Thr	
	210					215					220					
Met	Ile	Ser	Ser	Cys	Pro	Glu	Gly	Thr	Asn	Tyr	Ile	Ile	Asn	Arg	Lys	
225					230					235					240	
Leu	Ile	Leu	Ser	Asp	Phe	Ser	Leu	Leu	Asn	Lys	Val	Ser	Ser	Gly	Gly	
				245					250					255		
Ala	Phe	Arg	Asn	Leu	Ala	Gly	Lys	Ile	Ser	Phe	Leu	Gly	Lys	Asn	Ser	
			260					265					270			
Ser	Ala	Ser	Ile	His	Phe	Lys	His	Ile	Asn	Ile	Asn	Gly	Phe	Gly	Ala	
		275					280					285				
Gly	Val	Phe	Ser	Glu	Ser	Ser	Ile	Glu	Phe	Thr	Asp	Leu	Arg	Lys	Leu	
	290					295					300					
Val	Ala	Phe	Gly	Ser	Glu	Ser	Thr	Gly	Gly	Ile	Phe	Thr	Ala	Lys	Glu	
305					310					315					320	
Asp	Ile	Ser	Phe	Lys	Asn	Asn	His	His	Ile	Ala	Phe	Arg	Asn	Asn	Ile	
				325					330					335		
Thr	Lys	Gly	Asn	Gly	Gly	Val	Ile	Gln	Leu	Gln	Gly	Asp	Met	Lys	Gly	
			340					345					350			
Ser	Val	Ser	Phe	Val	Asp	Gln	Arg	Gly	Ala	Ile	Ile	Phe	Thr	Asn	Asn	
		355					360					365				
Gln	Ala	Val	Thr	Ser	Ser	Ser	Met	Lys	His	Ser	Gly	Arg	Gly	Gly	Ala	
	370					375					380					
Ile	Ser	Gly	Asp	Phe	Ala	Gly	Ser	Arg	Ile	Leu	Phe	Leu	Asn	Asn	Gln	
385					390					395						

Gly Gly Gly Ala Ile Thr Ser Ser Gln Cys Ser Ile Thr Ala His Asn
 500 505 510
 Thr Ile Thr Phe Ser Asp Asn Ala Ala Gly Asp Leu Gly Gly Gly Ala
 515 520 525
 Ile Leu Leu Glu Gly Lys Lys Pro Ser Leu Thr Leu Ile Ala His Ser
 530 535 540
 Gly Asn Ile Ala Phe Ser Gly Asn Thr Met Leu His Ile Thr Lys Lys
 545 550 555 560
 Ala Ser Leu Asp Arg His Asn Ser Ile Leu Ile Lys Glu Ala Pro Tyr
 565 570 575
 Lys Ile Gln Leu Ala Ala Asn Lys Asn His Ser Ile His Phe Phe Asp
 580 585 590
 Pro Val Met Ala Leu Ser Ala Ser Ser Ser Pro Ile Gln Ile Asn Ala
 595 600 605
 Pro Glu Tyr Glu Thr Pro Phe Phe Ser Pro Lys
 610 615

<210> 310

<211> 39

<212> DNA

<213> Chlamydia trachomatis

<400> 310

gagagcggcc gctccattct attcatttct ttgatcctg

39

<210> 311

<211> 33

<212> DNA

<213> Chlamydia trachomatis

<400> 311

gagagcggcc gcttagaagc caacatagcc tcc

33

<210> 312

<211> 2076

<212> DNA

<213> Chlamydia trachomatis

<400> 312

atgcatcacc	atcaccatca	cacggccgcg	tccgataact	tccagctgtc	ccaggggtggg	60
cagggattcg	ccattccgat	cgggcaggcg	atggcgatcg	cgggccagat	caagcttccc	120
accgttcata	tcgggcctac	cgcttcctc	ggcttgggtg	ttgtcgacaa	caacggcaac	180
ggcgcacgag	tccaacgcgt	ggtcgggagc	gctccggcgg	caagtctcgg	catctccacc	240
ggcgacgtga	tcaccgcggt	cgacggcgct	ccgatcaact	cggccaccgc	gatggcggac	300
gcgcttaacg	ggcatcatcc	cggtgacgtc	atctcggtga	cctggcaaac	caagtcgggc	360
ggcacgcgta	cagggaaacgt	gacattggcc	gagggacccc	cggccgaatt	ctgcagatat	420
ccatcacact	ggcgccgct	ccattctatt	catttctttg	atcctgtcat	ggcattgtca	480
gcatcatctt	cccctataca	aatcaatgct	cctgagtatg	aaactccctt	cttctcacct	540
aagggtatga	tcgtttttctc	gggtgcgaat	cttttagatg	atgctaggga	agatgttgca	600
aatagaacat	cgattttttaa	ccaacccggt	catctatata	atggcaccct	atctatcgaa	660
aatggagccc	atctgattgt	ccaaagcttc	aaacagaccg	gaggacgtat	cagtttatct	720
ccaggatcct	cotttgctct	atacacgatg	aactcgttct	tccatggcaa	catatccagc	780
aaagaacccc	tagaaattaa	tggtttaagc	tttgagtag	atatctctcc	ttctaattct	840
caagcagaga	tccgtgccgg	caacgctcct	ttacgattat	ccggatcccc	atctatccat	900
gatcctgaag	gattattcta	cgaaaatcgc	gatactgcag	catcaccata	ccaaatggaa	960
atcttgctca	cctctgataa	aactgtagat	atctccaaat	ttactactga	ttctctagtt	1020
acgaacaaac	aatcaggatt	ccaaggagcc	tggcatttta	gctggcagcc	aaatactata	1080

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aacaatacta aacaaaaaat attaagagct tcttggtcc caacaggaga atatgtcctt 1140
gaatccaatc gagtggggcg tgccgttcct aattccttat ggagcacatt tttactttta 1200
cagacagcct ctcataactt aggcgatcat ctatgtaata atcgatctct tattcctact 1260
tcatacttcg gagttttaat tggaggaact ggagcagaaa tgtctaccca ctctcagaa 1320
gaagaaagct ttatatctcg tttaggagct acaggaacct ctatcatacg cttaaactccc 1380
tccctgacac tctctggagg aggcacacat atgttcggag attcgttcgt tgcagactta 1440
ccagaacaca tcacttcaga aggaattggt cagaatgtcg gtttaaccca tgtctgggga 1500
ccccttactg tcaattctac attatgtgca gccttagatc acaacgcgat ggtccgcata 1560
tgctccaaaa aagatcacac ctatgggaaa tgggatacat tcggtatgcg aggaacatta 1620
ggagcctctt atacattcct agaatatgat caaactatgc gcgtattctc attcgccaac 1680
atcgaagcca caaatatctt gcaaagagct tttactgaaa caggctataa cccaagaagt 1740
ttttccaaga caaaacttct aaacatcgcc atccccatag ggattgggta tgaattctgc 1800
ttagggaata gctcttttgc tctactaggt aagggatcca tcggttactc tcgagatatt 1860
aaacgagaaa acccatccac tcttgctcac ctggctatga atgattttgc ttggactacc 1920
aatggctggt cagttccaac ctccgcacac acattggcaa atcaattgat tcttcgctat 1980
aaagcatggt ccttatacat cacggcatat actatcaacc gtgaagggaa gaacctctcc 2040
aatagcttat cctgcggagg ctatgttggc ttctaa 2076

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<210> 313
<211> 691
<212> PRT
<213> Chlamydia trachomatis

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<400> 313
Met His His His His His His Thr Ala Ala Ser Asp Asn Phe Gln Leu
  1          5          10          15
Ser Gln Gly Gly Gln Gly Phe Ala Ile Pro Ile Gly Gln Ala Met Ala
  20          25          30
Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
  35          40          45
Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
  50          55          60
Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
  65          70          75          80
Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
  85          90          95
Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
  100         105         110
Val Thr Trp Gln Thr Lys Ser Gly Thr Arg Thr Gly Asn Val Thr
  115         120         125
Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
  130         135         140
Arg Pro Leu His Ser Ile His Phe Phe Asp Pro Val Met Ala Leu Ser
  145         150         155         160
Ala Ser Ser Ser Pro Ile Gln Ile Asn Ala Pro Glu Tyr Glu Thr Pro
  165         170         175
Phe Phe Ser Pro Lys Gly Met Ile Val Phe Ser Gly Ala Asn Leu Leu
  180         185         190
Asp Asp Ala Arg Glu Asp Val Ala Asn Arg Thr Ser Ile Phe Asn Gln
  195         200         205
Pro Val His Leu Tyr Asn Gly Thr Leu Ser Ile Glu Asn Gly Ala His
  210         215         220
Leu Ile Val Gln Ser Phe Lys Gln Thr Gly Gly Arg Ile Ser Leu Ser
  225         230         235         240
Pro Gly Ser Ser Leu Ala Leu Tyr Thr Met Asn Ser Phe Phe His Gly
  245         250         255
Asn Ile Ser Ser Lys Glu Pro Leu Glu Ile Asn Gly Leu Ser Phe Gly

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<210> 314

<211> 38
 <212> DNA
 <213> Chlamydia trachomatis

<400> 314
 gagagcggcc gctcatgatt aaaagaactt ctctatcc 38

<210> 315
 <211> 36
 <212> DNA
 <213> Chlamydia trachomatis

<400> 315
 agcggccgct tataattctg catcatcttc tatggc 36

<210> 316
 <211> 1941
 <212> DNA
 <213> Chlamydia trachomatis

<400> 316
 atgcatcacc atcaccatca cacggccgcg tccgataact tccagctgtc ccaggggtggg 60
 cagggattcg ccattccgat cgggcaggcg atggcgatcg cgggccagat caagcttccc 120
 accgttcata tcgggcctac cgccttcctc ggcttggttg ttgtcgacaa caacggcaac 180
 ggcgacgag tccaacgcgt ggtcgggagc gctccggcgg caagtctcgg catctccacc 240
 ggcgacgtga tcaccgcggt cgacggcgct ccgatcaact cggccaccgc gatggcggac 300
 gcgcttaacg ggcatcatcc cggtagcgtc atctcggtga cctggcaaac caagtcgggc 360
 ggacgcgta cagggaaact gacattggcc gagggacccc cggccgaatt ctgcagatat 420
 ccatcacact ggcgccgct catgattaaa agaactttct tctcctttgc ttgcctcagt 480
 tttttttatc tttcaactat atccattttg caagctaatt aaacggatac gctacagttc 540
 cggcgattta ctttttcgga tagagagatt cagttcgtcc tagatcccgc ctctttaatt 600
 accgcccata acatcggttt atctaattta cagtaaaacg gaaccggagc ctgtaccatt 660
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 tctggagctg ttgtgttctc ctacaatcaa atgtctagtg acatacgaac tctgatgggt 1860
 aaagaacaca attacattaa agaagcccca actactttta aattcggaac gctagccata 1920
 gaagatgatg cagaattata a 1941

<210> 317
 <211> 646

<212> PRT

<213> Chlamydia trachomatis

<400> 317

Met	His	His	His	His	His	His	Thr	Ala	Ala	Ser	Asp	Asn	Phe	Gln	Leu
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Ser	Gln	Gly	Gly	Gln	Gly	Phe	Ala	Ile	Pro	Ile	Gly	Gln	Ala	Met	Ala
			20					25					30		
Ile	Ala	Gly	Gln	Ile	Lys	Leu	Pro	Thr	Val	His	Ile	Gly	Pro	Thr	Ala
		35					40					45			
Phe	Leu	Gly	Leu	Gly	Val	Val	Asp	Asn	Asn	Gly	Asn	Gly	Ala	Arg	Val
	50					55				60					
Gln	Arg	Val	Val	Gly	Ser	Ala	Pro	Ala	Ala	Ser	Leu	Gly	Ile	Ser	Thr
65					70					75				80	
Gly	Asp	Val	Ile	Thr	Ala	Val	Asp	Gly	Ala	Pro	Ile	Asn	Ser	Ala	Thr
				85					90					95	
Ala	Met	Ala	Asp	Ala	Leu	Asn	Gly	His	His	Pro	Gly	Asp	Val	Ile	Ser
			100					105					110		
Val	Thr	Trp	Gln	Thr	Lys	Ser	Gly	Gly	Thr	Arg	Thr	Gly	Asn	Val	Thr
		115					120					125			
Leu	Ala	Glu	Gly	Pro	Pro	Ala	Glu	Phe	Cys	Arg	Tyr	Pro	Ser	His	Trp
	130					135					140				
Arg	Pro	Leu	Met	Ile	Lys	Arg	Thr	Ser	Leu	Ser	Phe	Ala	Cys	Leu	Ser
145					150					155				160	
Phe	Phe	Tyr	Leu	Ser	Thr	Ile	Ser	Ile	Leu	Gln	Ala	Asn	Glu	Thr	Asp
				165					170					175	
Thr	Leu	Gln	Phe	Arg	Arg	Phe	Thr	Phe	Ser	Asp	Arg	Glu	Ile	Gln	Phe
			180					185					190		
Val	Leu	Asp	Pro	Ala	Ser	Leu	Ile	Thr	Ala	Gln	Asn	Ile	Val	Leu	Ser
		195					200					205			
Asn	Leu	Gln	Ser	Asn	Gly	Thr	Gly	Ala	Cys	Thr	Ile	Ser	Gly	Asn	Thr
	210					215					220				
Gln	Thr	Gln	Ile	Phe	Ser	Asn	Ser	Val	Asn	Thr	Thr	Ala	Asp	Ser	Gly
225					230					235				240	
Gly	Ala	Phe	Asp	Met	Val	Thr	Thr	Ser	Phe	Thr	Ala	Ser	Asp	Asn	Ala
				245					250					255	
Asn	Leu	Leu	Phe	Cys	Asn	Asn	Tyr	Cys	Thr	His	Asn	Lys	Gly	Gly	Gly
			260					265					270		
Ala	Ile	Arg	Ser	Gly	Gly	Pro	Ile	Arg	Phe	Leu	Asn	Asn	Gln	Asp	Val
		275					280					285			
Leu	Phe	Tyr	Asn	Asn	Ile	Ser	Ala	Gly	Ala	Lys	Tyr	Val	Gly	Thr	Gly
	290					295					300				
Asp	His	Asn	Glu	Lys	Asn	Arg	Gly	Gly	Ala	Leu	Tyr	Ala	Thr	Thr	Ile
305					310					315				320	
Thr	Leu	Thr	Gly	Asn	Arg	Thr	Leu	Ala	Phe	Ile	Asn	Asn	Met	Ser	Gly
				325					330					335	
Asp	Cys	Gly	Gly	Ala	Ile	Ser	Ala	Asp	Thr	Gln	Ile	Ser	Ile	Thr	Asp
			340					345					350		
Thr	Val	Lys	Gly	Ile	Leu	Phe	Glu	Asn	Asn	His	Thr	Leu	Asn	His	Ile
		355					360					365			
Pro	Tyr	Thr	Gln	Ala	Glu	Asn	Met	Ala	Arg	Gly	Gly	Ala	Ile	Cys	Ser
	370					375					380				
Arg	Arg	Asp	Leu	Cys	Ser	Ile	Ser	Asn	Asn	Ser	Gly	Pro	Ile	Val	Phe
385					390					395				400	
Asn	Tyr	Asn	Gln	Gly	Lys	Gly	Gly	Ala	Ile	Ser	Ala	Thr	Arg	Cys	
			405					410					415		
Val	Ile	Asp	Asn	Asn	Lys	Glu	Arg	Ile	Ile	Phe	Ser	Asn	Asn	Ser	Ser

420 425 430
 Leu Gly Trp Ser Gln Ser Ser Ser Ala Ser Asn Gly Gly Ala Ile Gln
 435 440 445
 Thr Thr Gln Gly Phe Thr Leu Arg Asn Asn Lys Gly Ser Ile Tyr Phe
 450 455 460
 Asp Ser Asn Thr Ala Thr His Ala Gly Gly Ala Ile Asn Cys Gly Tyr
 465 470 475 480
 Ile Asp Ile Arg Asp Asn Gly Pro Val Tyr Phe Leu Asn Asn Ser Ala
 485 490 495
 Ala Trp Gly Ala Ala Phe Asn Leu Ser Lys Pro Arg Ser Ala Thr Asn
 500 505 510
 Tyr Ile His Thr Gly Thr Gly Asp Ile Val Phe Asn Asn Asn Val Val
 515 520 525
 Phe Thr Leu Asp Gly Asn Leu Leu Gly Lys Arg Lys Leu Phe His Ile
 530 535 540
 Asn Asn Asn Glu Ile Thr Pro Tyr Thr Leu Ser Leu Gly Ala Lys Lys
 545 550 555 560
 Asp Thr Arg Ile Tyr Phe Tyr Asp Leu Phe Gln Trp Glu Arg Val Lys
 565 570 575
 Glu Asn Thr Ser Asn Asn Pro Pro Ser Pro Thr Ser Arg Asn Thr Ile
 580 585 590
 Thr Val Asn Pro Glu Thr Glu Phe Ser Gly Ala Val Val Phe Ser Tyr
 595 600 605
 Asn Gln Met Ser Ser Asp Ile Arg Thr Leu Met Gly Lys Glu His Asn
 610 615 620
 Tyr Ile Lys Glu Ala Pro Thr Thr Leu Lys Phe Gly Thr Leu Ala Ile
 625 630 635 640
 Glu Asp Asp Ala Glu Leu
 645

<210> 318
 <211> 34
 <212> DNA
 <213> Chlamydia trachomatis

<400> 318
 gagagcggcc gctcgacata cgaactctga tggg

34

<210> 319
 <211> 33
 <212> DNA
 <213> Chlamydia trachomatis

<400> 319
 gagagcggcc gcttaaaaga ccagagctcc tcc

33

<210> 320
 <211> 2148
 <212> DNA
 <213> Chlamydia trachomatis

<400> 320
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 accgttcata tcgggcctac cgccttcctc ggcttgggtg ttgtcgacaa caacggcaac 180
 ggcgcacgag tccaacgcgt ggtcgggagc gctccggcgg caagtctcgg catctccacc 240
 ggcgacgtga tcaccgcggt cgacggcgct ccgatcaact cggccaccgc gatggcggac 300

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ccatcacact ggcgcccgct cgacatacga actctgatgg gtaaagaaca caattacatt 480
aaagaagccc caactacttt aaaattcgga acgctagcca tagaagatga tgcagaatta 540
gaaatcttca atatcccggt tacccaaaat ccgactagcc ttcttgcttt aggaagcggc 600
gctacgctga ctggttgaaa gcaaggtaag ctcaatatta caaatcttgg tgttatttta 660
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ggttcttggg tcaccacaaa taccocatta gctaaacatt ccttttatgg gagaggttct 2040
cactccctca aattttctca tctgaaacta tttgctaact atcaagcaga agtggctact 2100
tccactgtct cacactacat caatgcagga ggagctctgg tcttttaa 2148

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<210> 321

<211> 715

<212> PRT

<213> Chlamydia trachomatis

<400> 321

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Ser Gln Gly Gly Gln Gly Phe Ala Ile Pro Ile Gly Gln Ala Met Ala
20          25          30
Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
35          40          45
Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
50          55          60
Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
65          70          75          80
Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
85          90          95
Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
100         105         110
Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
115         120         125
Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
130         135         140
Arg Pro Leu Asp Ile Arg Thr Leu Met Gly Lys Glu His Asn Tyr Ile

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Glu Gln Ala His Thr Ala Val Val Ser Pro Ile Gly Ile Lys Gly Ala
 610 615 620
 Tyr Ser Ser Asp Thr Trp Pro Thr Leu Ser Trp Glu Met Glu Leu Ala
 625 630 635 640
 Tyr Gln Pro Thr Leu Tyr Trp Lys Arg Pro Leu Leu Asn Thr Leu Leu
 645 650 655
 Ile Gln Asn Asn Gly Ser Trp Val Thr Thr Asn Thr Pro Leu Ala Lys
 660 665 670
 His Ser Phe Tyr Gly Arg Gly Ser His Ser Leu Lys Phe Ser His Leu
 675 680 685
 Lys Leu Phe Ala Asn Tyr Gln Ala Glu Val Ala Thr Ser Thr Val Ser
 690 695 700
 His Tyr Ile Asn Ala Gly Gly Ala Leu Val Phe
 705 710 715

<210> 322

<211> 37

<212> DNA

<213> Chlamydia trachomatis

<400> 322

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37

<210> 323

<211> 36

<212> DNA

<213> Chlamydia trachomatis

<400> 323

gagagcggcc gcttacacag atccattacc ggactg

36

<210> 324

<211> 1896

<212> DNA

<213> Chlamydia trachomatis

<400> 324

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accgttcata	tcgggcctac	cgccttcctc	ggcttgggtg	ttgtcgacaa	caacggcaac	180
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ggcgacgtga	tcaccgcggt	cgacggcgct	ccgatcaact	cggccaccgc	gatggcggac	300
gcgcttaacg	ggcatcatcc	cggtgacgtc	atctcggtga	cctggcaaac	caagtcgggc	360
ggcacgcgta	cagggaaacgt	gacattggcc	gagggacccc	cggccgaatt	ctgcagatat	420
ccatcacact	ggcggccgct	catgcctttt	tctttgagat	ctacatcatt	ttgtttttta	480
gcttgtttgt	gttcttatte	gtatggattc	gcgagctctc	ctcaagtgtt	aacacctaatt	540
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gtctatgcag	gggcagagaa	cggctcaatt	atctcagcta	atggcgacaa	tttaacgatt	660
accggacaaa	accatacatt	atcatttaca	gattotcaag	ggccagttct	tcaaaattat	720
gccttcattt	cagcaggaga	gacacttact	ctgaaagatt	tttcgagttt	gatgttctcg	780
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gcaggcggaag	tgattttttg	ggataactct	gtgggggtatt	ctcctttgtc	tattgtgccca	900
gcacgcactc	caactcctcc	agcaccagca	ccagctcctg	ctgcttcaag	ctcttttatct	960
ccaacagtta	gtgatgctcg	gaaaggtct	attttttctg	tagagactag	tttgagatc	1020
tcaggogtca	aaaaaggggt	catgttcgat	aataatgccg	ggaatttttg	aacagttttt	1080
cgaggtaata	gtaataataa	tgctggtagt	gggggtagtg	ggtctgctac	aacaccaagt	1140
tttacagtta	aaaactgtaa	agggaaagtt	tctttcacag	ataacgtagc	ctcctgtgga	1200

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gtcacgatta atcagtcggt taatggatct gtgtaa 1896

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<210> 325

<211> 631

<212> PRT

<213> Chlamydia trachomatis

<400> 325

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Ser Gln Gly Gly Gln Gly Phe Ala Ile Pro Ile Gly Gln Ala Met Ala
 20          25          30
Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
 35          40          45
Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
 50          55          60
Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
 65          70          75          80
Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
 85          90          95
Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
 100         105         110
Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
 115         120         125
Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
 130         135         140
Arg Pro Leu Met Pro Phe Ser Leu Arg Ser Thr Ser Phe Cys Phe Leu
 145         150         155         160
Ala Cys Leu Cys Ser Tyr Ser Tyr Gly Phe Ala Ser Ser Pro Gln Val
 165         170         175
Leu Thr Pro Asn Val Thr Thr Pro Phe Lys Gly Asp Asp Val Tyr Leu
 180         185         190
Asn Gly Asp Cys Ala Phe Val Asn Val Tyr Ala Gly Ala Glu Asn Gly
 195         200         205
Ser Ile Ile Ser Ala Asn Gly Asp Asn Leu Thr Ile Thr Gly Gln Asn
 210         215         220
His Thr Leu Ser Phe Thr Asp Ser Gln Gly Pro Val Leu Gln Asn Tyr
 225         230         235         240
Ala Phe Ile Ser Ala Gly Glu Thr Leu Thr Leu Lys Asp Phe Ser Ser
 245         250         255
Leu Met Phe Ser Lys Asn Val Ser Cys Gly Glu Lys Gly Met Ile Ser
 260         265         270
Gly Lys Thr Val Ser Ile Ser Gly Ala Gly Glu Val Ile Phe Trp Asp
 275         280         285
Asn Ser Val Gly Tyr Ser Pro Leu Ser Ile Val Pro Ala Ser Thr Pro
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<210> 326
<211> 40
<212> DNA
<213> Chlamydia trachomatis
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40

<400> 327

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33

<210> 328
<211> 2148
<212> DNA
<213> Chlymadia trachomatis

<400> 328
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accgttcata tcgggcctac cgccttcctc ggcttgggtg ttgtcgacaa caacggcaac 180
ggcgacagag tccaacgcgt ggtcgggagc gctccggcgg caagtctcgg catctccacc 240
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<210> 329
<211> 715
<212> PRT
<213> Chlamydia trachomatis

<400> 329
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20 25 30
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35 40 45

Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
 50 55 60
 Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
 65 70 75 80
 Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
 85 90 95
 Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
 100 105 110
 Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
 115 120 125
 Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
 130 135 140
 Arg Pro Leu Asp Pro Val Val Gln Asn Asn Ser Ala Ala Gly Ala Ser
 145 150 155 160
 Thr Pro Ser Pro Ser Ser Ser Ser Met Pro Gly Ala Val Thr Ile Asn
 165 170 175
 Gln Ser Gly Asn Gly Ser Val Ile Phe Thr Ala Glu Ser Leu Thr Pro
 180 185 190
 Ser Glu Lys Leu Gln Val Leu Asn Ser Thr Ser Asn Phe Pro Gly Ala
 195 200 205
 Leu Thr Val Ser Gly Gly Glu Leu Val Val Thr Glu Gly Ala Thr Leu
 210 215 220
 Thr Thr Gly Thr Ile Thr Ala Thr Ser Gly Arg Val Thr Leu Gly Ser
 225 230 235 240
 Gly Ala Ser Leu Ser Ala Val Ala Gly Ala Ala Asn Asn Asn Tyr Thr
 245 250 255
 Cys Thr Val Ser Lys Leu Gly Ile Asp Leu Glu Ser Phe Leu Thr Pro
 260 265 270
 Asn Tyr Lys Thr Ala Ile Leu Gly Ala Asp Gly Thr Val Thr Val Asn
 275 280 285
 Ser Gly Ser Thr Leu Asp Leu Val Met Glu Asn Glu Ala Glu Val Tyr
 290 295 300
 Asp Asn Pro Leu Phe Val Gly Ser Leu Thr Ile Pro Phe Val Thr Leu
 305 310 315 320
 Ser Ser Ser Ser Ala Ser Asn Gly Val Thr Lys Asn Ser Val Thr Ile
 325 330 335
 Asn Asp Ala Asp Ala Ala His Tyr Gly Tyr Gln Gly Ser Trp Ser Ala
 340 345 350
 Asp Trp Thr Lys Pro Pro Leu Ala Pro Asp Ala Lys Gly Met Val Pro
 355 360 365
 Pro Asn Thr Asn Asn Thr Leu Tyr Leu Thr Trp Arg Pro Ala Ser Asn
 370 375 380
 Tyr Gly Glu Tyr Arg Leu Asp Pro Gln Arg Lys Gly Glu Leu Val Pro
 385 390 395 400
 Asn Ser Leu Trp Val Ala Gly Ser Ala Leu Arg Thr Phe Thr Asn Gly
 405 410 415
 Leu Lys Glu His Tyr Val Ser Arg Asp Val Gly Phe Val Ala Ser Leu
 420 425 430
 His Ala Leu Gly Asp Tyr Ile Leu Asn Tyr Thr Gln Asp Asp Arg Asp
 435 440 445
 Gly Phe Leu Ala Arg Tyr Gly Gly Phe Gln Ala Thr Ala Ala Ser His
 450 455 460
 Tyr Glu Asn Gly Ser Ile Phe Gly Val Ala Phe Gly Gln Leu Tyr Gly
 465 470 475 480
 Gln Thr Lys Ser Arg Met Tyr Tyr Ser Lys Asp Ala Gly Asn Met Thr
 485 490 495
 Met Leu Ser Cys Phe Gly Arg Ser Tyr Val Asp Ile Lys Gly Thr Glu

500 505 510
 Thr Val Met Tyr Trp Glu Thr Ala Tyr Gly Tyr Ser Val His Arg Met
 515 520 525
 His Thr Gln Tyr Phe Asn Asp Lys Thr Gln Lys Phe Asp His Ser Lys
 530 535 540
 Cys His Trp His Asn Asn Asn Tyr Tyr Ala Phe Val Gly Ala Glu His
 545 550 555 560
 Asn Phe Leu Glu Tyr Cys Ile Pro Thr Arg Gln Leu Ala Arg Asp Tyr
 565 570 575
 Glu Leu Thr Gly Phe Met Arg Phe Glu Met Ala Gly Gly Trp Ser Ser
 580 585 590
 Ser Thr Arg Glu Thr Gly Ser Leu Thr Arg Tyr Phe Ala Arg Gly Ser
 595 600 605
 Gly His Asn Met Ser Leu Pro Ile Gly Ile Val Ala His Ala Val Ser
 610 615 620
 His Val Arg Arg Ser Pro Pro Ser Lys Leu Thr Leu Asn Met Gly Tyr
 625 630 635 640
 Arg Pro Asp Ile Trp Arg Val Thr Pro His Cys Asn Met Glu Ile Ile
 645 650 655
 Ala Asn Gly Val Lys Thr Pro Ile Gln Gly Ser Pro Leu Ala Arg His
 660 665 670
 Ala Phe Phe Leu Glu Val His Asp Thr Leu Tyr Ile His His Phe Gly
 675 680 685
 Arg Ala Tyr Met Asn Tyr Ser Leu Asp Ala Arg Arg Arg Gln Thr Ala
 690 695 700
 His Phe Val Ser Met Gly Leu Asn Arg Ile Phe
 705 710 715

<210> 330

<211> 38

<212> DNA

<213> Chlymadia trachomatis

<400> 330

gagagcggccc gctcatgaaa tggctgtcag ctactgcg

38

<210> 331

<211> 34

<212> DNA

<213> Chlymadia trachomatis

<400> 331

gagcggccgc ttacttaatg cgaatttctt caag

34

<210> 332

<211> 1557

<212> DNA

<213> Chlymadia trachomatis

<400> 332

atgcatcacc	atcaccatca	cacggccgcg	tccgataact	tccagctgtc	ccagggtggg	60
cagggattcg	ccattccgat	cgggcaggcg	atggcgatcg	cgggccagat	caagcttccc	120
accgttcata	tggggcctac	cgcttctctc	ggcttgggtg	ttgtcgacaa	caacggcaac	180
ggcgacagag	tccaacgcgt	ggtcgggagc	gctccggcgg	caagtctcgg	catctccacc	240
ggcgacgtga	tcaccgcggt	cgacggcgct	ccgatcaact	cggccaccgc	gatggcggac	300
gcgcttaacg	ggcatcatcc	cggtgacgtc	atctcggtga	cctggcaaac	caagtcgggc	360
ggcacgcgta	cagggaaacgt	gacattggcc	gagggacccc	cggccgaatt	ctgcagatat	420

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ccatcacact ggcgccgct catgaaatgg ctgtcagcta ctgcggtggt tgctgctggt 480
ctcccctcag ttccagggtt ttgcttccca gaacctaaag aattaaattt ctctcgcgta 540
gaaacttctt cctctaccac ttttactgaa acaattggag aagctggggc agaatatatc 600
gtctctggta acgcatcttt cacaaaattt accaacattc ctactaccga tacaacaact 660
cccacgaact caaactcctc tagctctagc ggagaaactg cttccgtttc tgaggatagt 720
gactctacaa caacgactcc tgatcctaaa ggtggcggcg ccttttataa cgcgcactcc 780
ggagttttgt cctttatgac acgatcagga acagaagggt ccttaactct gtctgagata 840
aaaatgactg gtgaaggcgg tgctatcttc totcaaggag agctgctatt tacagatctg 900
acaagtctaa ccattccaaa taacttatcc cagctatccg gaggagcgat ttttggagga 960
tctacaatct ccctatcagg gattactaaa gcgactttct cctgcaactc tgcagaagtt 1020
cctgctcctg ttaagaaacc tacagaacct aaagctcaaa cagcaagcga aacgtcgggt 1080
tctagtagtt ctacggaata tgattcgggtg tcttccccca gttccagtag agctgaaccc 1140
gcagcagcta atcttcaaag tcactttatt tgtgctacag ctactcctgc tgcctaaacc 1200
gatacagaaa catcaactcc ctctcataag ccaggatctg ggggagctat ctatgctaaa 1260
ggcgacctta ctatcgaga ctctcaagag gtactattct caataataaa agctactaaa 1320
gatggaggag cgatctttgc tgagaaagat gtttctttcg agaattattc atcattaaaa 1380
gtacaaacta acggtgctga agaaaaggga ggagctatct atgctaaagg tgacctctca 1440
attcaatctt ctaaacagag tctttttaat tctaactaca gtaaacaagg tgggggggct 1500
ctatatgttg aaggaggtat aaacttccaa gatcttgaag aaattcgcac taagtaa 1557

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<210> 333

<211> 518

<212> PRT

<213> Chlymadia trachomatis

<400> 333

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Met His His His His His His Thr Ala Ala Ser Asp Asn Phe Gln Leu
1          5          10          15
Ser Gln Gly Gly Gln Gly Phe Ala Ile Pro Ile Gly Gln Ala Met Ala
20          25          30
Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
35          40          45
Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
50          55          60
Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
65          70          75          80
Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
85          90          95
Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
100         105         110
Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
115         120         125
Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
130         135         140
Arg Pro Leu Met Lys Trp Leu Ser Ala Thr Ala Val Phe Ala Ala Val
145         150         155         160
Leu Pro Ser Val Ser Gly Phe Cys Phe Pro Glu Pro Lys Glu Leu Asn
165         170         175
Phe Ser Arg Val Glu Thr Ser Ser Ser Thr Thr Phe Thr Glu Thr Ile
180         185         190
Gly Glu Ala Gly Ala Glu Tyr Ile Val Ser Gly Asn Ala Ser Phe Thr
195         200         205
Lys Phe Thr Asn Ile Pro Thr Thr Asp Thr Thr Thr Pro Thr Asn Ser
210         215         220
Asn Ser Ser Ser Ser Ser Gly Glu Thr Ala Ser Val Ser Glu Asp Ser
225         230         235         240
Asp Ser Thr Thr Thr Thr Pro Asp Pro Lys Gly Gly Gly Ala Phe Tyr

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245 250 255
 Asn Ala His Ser Gly Val Leu Ser Phe Met Thr Arg Ser Gly Thr Glu
 260 265 270
 Gly Ser Leu Thr Leu Ser Glu Ile Lys Met Thr Gly Glu Gly Gly Ala
 275 280 285
 Ile Phe Ser Gln Gly Glu Leu Phe Thr Asp Leu Thr Ser Leu Thr
 290 295 300
 Ile Gln Asn Asn Leu Ser Gln Leu Ser Gly Gly Ala Ile Phe Gly Gly
 305 310 315 320
 Ser Thr Ile Ser Leu Ser Gly Ile Thr Lys Ala Thr Phe Ser Cys Asn
 325 330 335
 Ser Ala Glu Val Pro Ala Pro Val Lys Lys Pro Thr Glu Pro Lys Ala
 340 345 350
 Gln Thr Ala Ser Glu Thr Ser Gly Ser Ser Ser Ser Ser Gly Asn Asp
 355 360 365
 Ser Val Ser Ser Pro Ser Ser Ser Arg Ala Glu Pro Ala Ala Ala Asn
 370 375 380
 Leu Gln Ser His Phe Ile Cys Ala Thr Ala Thr Pro Ala Ala Gln Thr
 385 390 395 400
 Asp Thr Glu Thr Ser Thr Pro Ser His Lys Pro Gly Ser Gly Gly Ala
 405 410 415
 Ile Tyr Ala Lys Gly Asp Leu Thr Ile Ala Asp Ser Gln Glu Val Leu
 420 425 430
 Phe Ser Ile Asn Lys Ala Thr Lys Asp Gly Gly Ala Ile Phe Ala Glu
 435 440 445
 Lys Asp Val Ser Phe Glu Asn Ile Thr Ser Leu Lys Val Gln Thr Asn
 450 455 460
 Gly Ala Glu Glu Lys Gly Gly Ala Ile Tyr Ala Lys Gly Asp Leu Ser
 465 470 475 480
 Ile Gln Ser Ser Lys Gln Ser Leu Phe Asn Ser Asn Tyr Ser Lys Gln
 485 490 495
 Gly Gly Gly Ala Leu Tyr Val Glu Gly Gly Ile Asn Phe Gln Asp Leu
 500 505 510
 Glu Glu Ile Arg Ile Lys
 515

<210> 334

<211> 37

<212> DNA

<213> Chlymadia trachomatis

<400> 334

gagagcggcc gctcggtgac ctctcaattc aatcttc

37

<210> 335

<211> 39

<212> DNA

<213> Chlamydia trachomatis

<400> 335

gagagcggcc gcttagttct ctgttacaga taaggagac

39

<210> 336

<211> 1758

<212> DNA

<213> Chlymadia trachomatis

<400> 336

atgcatcacc	atcaccatca	cacggccgcg	tccgataact	tccagctgtc	ccaggggtggg	60
cagggattcg	ccattccgat	cgggcaggcg	atggcgatcg	cgggccagat	caagcttccc	120
accgttcata	tcgggcctac	cgccttcctc	ggcttgggtg	ttgtcgacaa	caacggcaac	180
ggcgacgag	tccaacgcgt	ggtcgggagc	gctccggcgg	caagtctcgg	catctccacc	240
ggcgacgtga	tcaccgcggt	cgacggcgct	cogatcaact	cggccaccgc	gatggcggac	300
gcgcttaacg	ggcatcatcc	cggtgacgtc	atctcgggtg	cctggcaaac	caagtcgggc	360
ggcacgcgta	cagggaaagt	gacattggcc	gagggacccc	cggccgaatt	ctgcagatat	420
ccatcacact	ggcggccgct	cggtgacctc	tcaattcaat	cttctaaaca	gagtcttttt	480
aattctaact	acagtaaaca	aggtgggggg	gctctatatg	ttgaaggagg	tataaaacttc	540
caagatcttg	aagaaattcg	cattaagtac	aataaagctg	gaacgttcga	aacaaaaaaa	600
atcactttac	cttctttaaa	agctcaagca	tctgcaggaa	atgcagatgc	ttgggcctct	660
tcctctcctc	aatctggttc	tggagcaact	acagtctccg	actcaggaga	ctctagctct	720
ggctcagact	cggatacctc	agaaacagtt	ccagtcacag	ctaaaggcgg	tgggctttat	780
actgataaga	atctttcgat	tactaacatc	acaggaatta	tcgaaattgc	aaataacaaa	840
gcgacagatg	ttggaggtgg	tgcttacgta	aaaggaaccc	ttacttgtga	aaactctcac	900
cgtctacaat	ttttgaaaaa	ctcttccgat	aaacaagggtg	gaggaatcta	cggagaagac	960
aacatcaccc	tatctaattt	gacaggggaag	actctattcc	aagagaatac	tgccaaagaa	1020
gagggcggtg	gactcttcat	aaaagggtaca	gataaagctc	ttacaatgac	aggactggat	1080
agtttctgtt	taattaataa	cacatcagaa	aaacatggtg	gtggagcctt	tgttaccaa	1140
gaaatctctc	agacttacac	ctctgatgtg	gaaacaattc	caggaatcac	gcctgtacat	1200
ggtgaaacag	tcattactgg	caataaatct	acaggaggta	atggtggagg	cgtgtgtaca	1260
aaacgtcttg	ccttatctaa	ccttcaaagc	atttctatat	ccgggaattc	tgacgacgaa	1320
aatggtggtg	gagcccacac	atgcccgagat	agcttcccaa	cggcgggatac	tgacgaacag	1380
ccgcgacgag	cttctgccgc	gacgtctact	cccaaattctg	ccccgggtctc	aactgctcta	1440
agcacacctt	catcttctac	cgtctcttca	ttaaccttac	tagcagcctc	ttcacaagcc	1500
tctcctgcaa	cctctaataa	ggaaactcaa	gatcctaata	ctgatacaga	cttattgatc	1560
gattatgtag	ttgatacgac	tatcagcaaa	aacactgcta	agaaaggcgg	tggaatctat	1620
gctaaaaaag	ccaagatgtc	ccgcatagac	caactgaata	tctctgagaa	ctccgctaca	1680
gagatagggtg	gaggtatctg	ctgtaaagaa	tctttagaac	tagatgctct	agtctcctta	1740
tctgtaacag	agaactaa					1758

<210> 337

<211> 585

<212> PRT

<213> Chlamydia trachomatis

<400> 337

Met	His	His	His	His	His	Thr	Ala	Ala	Ser	Asp	Asn	Phe	Gln	Leu
1				5				10					15	
Ser	Gln	Gly	Gly	Gln	Gly	Phe	Ala	Ile	Pro	Ile	Gly	Gln	Ala	Met
			20					25				30		Ala
Ile	Ala	Gly	Gln	Ile	Lys	Leu	Pro	Thr	Val	His	Ile	Gly	Pro	Thr
			35				40				45			Ala
Phe	Leu	Gly	Leu	Gly	Val	Val	Asp	Asn	Asn	Gly	Asn	Gly	Ala	Arg
	50					55				60				Val
Gln	Arg	Val	Val	Gly	Ser	Ala	Pro	Ala	Ala	Ser	Leu	Gly	Ile	Ser
	65				70					75				80
Gly	Asp	Val	Ile	Thr	Ala	Val	Asp	Gly	Ala	Pro	Ile	Asn	Ser	Ala
				85					90				95	Thr
Ala	Met	Ala	Asp	Ala	Leu	Asn	Gly	His	His	Pro	Gly	Asp	Val	Ile
			100					105					110	Ser
Val	Thr	Trp	Gln	Thr	Lys	Ser	Gly	Gly	Thr	Arg	Thr	Gly	Asn	Val
		115					120					125		Thr
Leu	Ala	Glu	Gly	Pro	Pro	Ala	Glu	Phe	Cys	Arg	Tyr	Pro	Ser	His
	130					135					140			Trp
Arg	Pro	Leu	Gly	Asp	Leu	Ser	Ile	Gln	Ser	Ser	Lys	Gln	Ser	Leu

<210> 338

<211> 38
 <212> DNA
 <213> Chlamydai trachomatis

<400> 338
 gagagcggcc gctcgaccaa ctgaatatct ctgagaac 38

<210> 339
 <211> 35
 <212> DNA
 <213> Chlamydia trachomatis

<400> 339
 gagagcggcc gcttaagaga ctacgtggag ttctg 35

<210> 340
 <211> 1965
 <212> DNA
 <213> Chlamydia trachomatis

<400> 340
 atgcatcacc atcaccatca cacggccgcg tccgataact tccagctgtc ccagggtggg 60
 cagggattcg ccattccgat cgggcaggcg atggcgatcg cgggccagat caagcttccc 120
 accgttcata tcgggcctac cgccttcctc ggcttgggtg ttgtcgacaa caacggcaac 180
 ggcgacgag tccaacgctt ggtcgggagc gctccggcgg caagtctcgg catctccacc 240
 ggcgacgtga tcaccgcggt cgacggcgct ccgatcaact cggccaccgc gatggcggac 300
 gcgcttaacg ggcatcatcc cggtgacgtc atctcggtga cctggcaaac caagtcgggc 360
 ggcacgcgta cagggaaact gacattggcc gagggacccc cggecgaatt ctgcagatat 420
 ccatcacact ggccggccgct cgaccaactg aatatctctg agaactccgc tacagagata 480
 ggtggaggta tctgctgtaa agaactctta gaactagatg ctctagtctc cttatctgta 540
 acagagaacc ttgttgggaa agaaggtgga ggcttacatg ctaaaactgt aaatatttct 600
 aatctgaaat caggcttctc tttctcgaac aacaaagcaa actcctcatc cacaggagtc 660
 gcaacaacag cttcagcacc tgetgcagct gctgcttccc tacaagcagc cgcagcagcc 720
 gcaccatcat ctccagcaac accaacttat tcaggtgtag taggaggagc tatctatgga 780
 gaaaaggtta cattctctca atgtagcggg acttgtcagt tctctgggaa ccaagctatc 840
 gataacaatc cctcccaatc atcgttgaac gtacaaggag gagccatcta tgccaaaacc 900
 tctttgtcta ttgatcttc cgatgctgga acctcctata ttttctcggg gaacagtgtc 960
 tccactggga aatctcaaac aacagggcaa atagcgggag gagegatcta ctcccctact 1020
 gttacattga attgtcctgc gacattctct aacaatacag cctctatagc tacaccgaag 1080
 acttcttctg aagatggatc ctcaggaaat tctattaaag ataccattgg aggagccatt 1140
 gcagggacag ccattaccct atctggagtc tctcgatttt cagggaatac ggctgattta 1200
 ggagctgcaa taggaactct agctaagtca aatacaccca gtgcaactag cggatctcaa 1260
 aatagcatta cagaaaaaat tacttttaga aacggttctt ttatttttga aagaaaccaa 1320
 gctaataaac gtggagcgat ttactctcct agcgtttcca ttaaagggaa taatattacc 1380
 ttcaatcaaa atacatccac tcatgatgga agcgtatatc actttacaaa agatgctacg 1440
 attgagctct taggatctgt tctttttaca ggaaataacg ttacagctac acaagctagt 1500
 tctgcaacat ctggacaaaa tacaataact gccaaactat gggcagccat ctttggagat 1560
 ccaggaaacca ctcaatcgtc tcaaacagat gccattttta cccttcttgc ttcttctgga 1620
 aacattactt ttagcaacaa cagttttacag aataaccaag gtgatactcc cgctagcaag 1680
 ttttgtagta ttgcaggata cgtcaaacct tctctacaag ccgctaaagg gaagactatt 1740
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 gaaacttttag atattaataa agaagagaac agtaatccat atacaggaac tattgtgttc 1860
 tcttctgaat tacatgaaaa caaatcttac atcccacaga atgcaatcct tcacaacgga 1920
 acttttagttc ttaaagagaa aacagaactc cacgtagtct cttaa 1965

<210> 341
 <211> 654

<212> PRT

<213> Chlamydia trachomatis

<400> 341

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Met His His His His His His Thr Ala Ala Ser Asp Asn Phe Gln Leu
 1          5          10          15
Ser Gln Gly Gly Gln Gly Phe Ala Ile Pro Ile Gly Gln Ala Met Ala
      20          25          30
Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
      35          40          45
Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
      50          55          60
Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
      65          70          75          80
Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
      85          90          95
Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
      100          105          110
Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
      115          120          125
Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
      130          135          140
Arg Pro Leu Asp Gln Leu Asn Ile Ser Glu Asn Ser Ala Thr Glu Ile
      145          150          155          160
Gly Gly Gly Ile Cys Cys Lys Glu Ser Leu Glu Leu Asp Ala Leu Val
      165          170          175
Ser Leu Ser Val Thr Glu Asn Leu Val Gly Lys Glu Gly Gly Gly Leu
      180          185          190
His Ala Lys Thr Val Asn Ile Ser Asn Leu Lys Ser Gly Phe Ser Phe
      195          200          205
Ser Asn Asn Lys Ala Asn Ser Ser Ser Thr Gly Val Ala Thr Thr Ala
      210          215          220
Ser Ala Pro Ala Ala Ala Ala Ala Ser Leu Gln Ala Ala Ala Ala Ala
      225          230          235          240
Ala Pro Ser Ser Pro Ala Thr Pro Thr Tyr Ser Gly Val Val Gly Gly
      245          250          255
Ala Ile Tyr Gly Glu Lys Val Thr Phe Ser Gln Cys Ser Gly Thr Cys
      260          265          270
Gln Phe Ser Gly Asn Gln Ala Ile Asp Asn Asn Pro Ser Gln Ser Ser
      275          280          285
Leu Asn Val Gln Gly Gly Ala Ile Tyr Ala Lys Thr Ser Leu Ser Ile
      290          295          300
Gly Ser Ser Asp Ala Gly Thr Ser Tyr Ile Phe Ser Gly Asn Ser Val
      305          310          315          320
Ser Thr Gly Lys Ser Gln Thr Thr Gly Gln Ile Ala Gly Gly Ala Ile
      325          330          335
Tyr Ser Pro Thr Val Thr Leu Asn Cys Pro Ala Thr Phe Ser Asn Asn
      340          345          350
Thr Ala Ser Ile Ala Thr Pro Lys Thr Ser Ser Glu Asp Gly Ser Ser
      355          360          365
Gly Asn Ser Ile Lys Asp Thr Ile Gly Gly Ala Ile Ala Gly Thr Ala
      370          375          380
Ile Thr Leu Ser Gly Val Ser Arg Phe Ser Gly Asn Thr Ala Asp Leu
      385          390          395          400
Gly Ala Ala Ile Gly Thr Leu Ala Asn Ala Asn Thr Pro Ser Ala Thr
      405          410          415
Ser Gly Ser Gln Asn Ser Ile Thr Glu Lys Ile Thr Leu Glu Asn Gly

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420 425 430
 Ser Phe Ile Phe Glu Arg Asn Gln Ala Asn Lys Arg Gly Ala Ile Tyr
 435 440 445
 Ser Pro Ser Val Ser Ile Lys Gly Asn Asn Ile Thr Phe Asn Gln Asn
 450 455 460
 Thr Ser Thr His Asp Gly Ser Ala Ile Tyr Phe Thr Lys Asp Ala Thr
 465 470 475 480
 Ile Glu Ser Leu Gly Ser Val Leu Phe Thr Gly Asn Asn Val Thr Ala
 485 490 495
 Thr Gln Ala Ser Ser Ala Thr Ser Gly Gln Asn Thr Asn Thr Ala Asn
 500 505 510
 Tyr Gly Ala Ala Ile Phe Gly Asp Pro Gly Thr Thr Gln Ser Ser Gln
 515 520 525
 Thr Asp Ala Ile Leu Thr Leu Leu Ala Ser Ser Gly Asn Ile Thr Phe
 530 535 540
 Ser Asn Asn Ser Leu Gln Asn Asn Gln Gly Asp Thr Pro Ala Ser Lys
 545 550 555 560
 Phe Cys Ser Ile Ala Gly Tyr Val Lys Leu Ser Leu Gln Ala Ala Lys
 565 570 575
 Gly Lys Thr Ile Ser Phe Phe Asp Cys Val His Thr Ser Thr Lys Lys
 580 585 590
 Thr Gly Ser Thr Gln Asn Val Tyr Glu Thr Leu Asp Ile Asn Lys Glu
 595 600 605
 Glu Asn Ser Asn Pro Tyr Thr Gly Thr Ile Val Phe Ser Ser Glu Leu
 610 615 620
 His Glu Asn Lys Ser Tyr Ile Pro Gln Asn Ala Ile Leu His Asn Gly
 625 630 635 640
 Thr Leu Val Leu Lys Glu Lys Thr Glu Leu His Val Val Ser
 645 650

<210> 342
 <211> 36
 <212> DNA
 <213> Chlamydia trachomatis

<400> 342
 gagagcggcc gctcggaact attgtgttct cttctg

36

<210> 343
 <211> 35
 <212> DNA
 <213> Chlamydia trachomatis

<400> 343
 gagagcggcc gcttagaaga tcatgcgagc accgc

35

<210> 344
 <211> 2103
 <212> DNA
 <213> Chlamydia trachomatis

<400> 344
 atgcatcacc atcaccatca cacggccgcg tccgataact tccagctgtc ccagggtggg 60
 cagggattcg ccattccgat cgggcaggcg atggcgatcg cgggccagat caagcttccc 120
 accgttcata tcgggcctac cgcttctctc ggcttgggtg ttgtcgacaa caacggcaac 180
 ggcgcacgag tccaacgcgt ggtcgggagc gtcgggcgg caagtctcgg catctccacc 240
 ggcgacgtga tcaccgcggt cgacggcgct ccgatcaact cggccaccgc gatggcggac 300

gcgcttaacg ggcacatcc cggtgacgtc atctcggtga cctggcaaac caagtcgggc 360
 ggcacgcgta caggggaacgt gacattggcc gagggacccc cggccgaatt ctgcagatat 420
 ccatcacact ggcggccgct cggaactatt gtgttctctt ctgaattaca tgaaaacaaa 480
 tcttacatcc cacagaatgc aatccttcac aacggaactt tagttcttaa agagaaaaca 540
 gaactccacg tagtctcttt tgagcagaaa gaaggggtcta aattaattat ggaacccgga 600
 gctgtgttat ctaaccaaaa catagctaac ggagctctag ctatcaatgg gttaacgatt 660
 gatctttcca gtatggggac tcctcaagca ggggaaatct tctctcctcc agaattacgt 720
 atcgttgcca cgacctctag tgcacccgga ggaagcgggg tcagcagtag tataccaaca 780
 aatcctaaaa ggattttctgc agcagtgcct tcaggttctg ccgcaactac tccaactatg 840
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 taccaaaacc ctatgttagg aagcgatcta gatgtaccac taattaagct tccgactaac 960
 acaagtgcag tccaagtcta tgatttaact ttatctgggg atcttttccc tcagaaaggg 1020
 tacatgggaa cctggacatt agattctaatt ccacaaacag ggaaacttca agccagatgg 1080
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 caacatggtt gggcaacttc tttcctaata caaggagtcg tgtcctatgg acatattaaa 1560
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 cctgtgggat gcgctgtcga aggagctatc atgaactgta atattcttat gtataataag 1860
 cttgcattag cctacatgcc ttctatctac agaaataatc ctgtctgtaa atatcgggta 1920
 ttgtcttcga atgaagctgg tcaagttatc tgccggagtgc caactagaac ctctgctaga 1980
 gcagaataca gtactcaact atatcttggt cccttctgga ctctctacgg aaactatact 2040
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 taa 2103

<210> 345
 <211> 700
 <212> PRT
 <213> Chlamydia trachomatis

<400> 345
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 20 25 30
 Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
 35 40 45
 Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
 50 55 60
 Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
 65 70 75 80
 Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
 85 90 95
 Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
 100 105 110
 Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
 115 120 125
 Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
 130 135 140
 Arg Pro Leu Gly Thr Ile Val Phe Ser Ser Glu Leu His Glu Asn Lys

145	150										155					160	
Ser	Tyr	Ile	Pro	Gln	Asn	Ala	Ile	Leu	His	Asn	Gly	Thr	Leu	Val	Leu		
				165					170					175			
Lys	Glu	Lys	Thr	Glu	Leu	His	Val	Val	Ser	Phe	Glu	Gln	Lys	Glu	Gly		
			180					185					190				
Ser	Lys	Leu	Ile	Met	Glu	Pro	Gly	Ala	Val	Leu	Ser	Asn	Gln	Asn	Ile		
		195					200					205					
Ala	Asn	Gly	Ala	Leu	Ala	Ile	Asn	Gly	Leu	Thr	Ile	Asp	Leu	Ser	Ser		
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Met	Gly	Thr	Pro	Gln	Ala	Gly	Glu	Ile	Phe	Ser	Pro	Pro	Glu	Leu	Arg		
225				230					235						240		
Ile	Val	Ala	Thr	Thr	Ser	Ser	Ala	Ser	Gly	Gly	Ser	Gly	Val	Ser	Ser		
			245						250					255			
Ser	Ile	Pro	Thr	Asn	Pro	Lys	Arg	Ile	Ser	Ala	Ala	Val	Pro	Ser	Gly		
			260					265					270				
Ser	Ala	Ala	Thr	Thr	Pro	Thr	Met	Ser	Glu	Asn	Lys	Val	Phe	Leu	Thr		
		275					280					285					
Gly	Asp	Leu	Thr	Leu	Ile	Asp	Pro	Asn	Gly	Asn	Phe	Tyr	Gln	Asn	Pro		
	290					295					300						
Met	Leu	Gly	Ser	Asp	Leu	Asp	Val	Pro	Leu	Ile	Lys	Leu	Pro	Thr	Asn		
305				310						315					320		
Thr	Ser	Asp	Val	Gln	Val	Tyr	Asp	Leu	Thr	Leu	Ser	Gly	Asp	Leu	Phe		
			325					330						335			
Pro	Gln	Lys	Gly	Tyr	Met	Gly	Thr	Trp	Thr	Leu	Asp	Ser	Asn	Pro	Gln		
			340					345					350				
Thr	Gly	Lys	Leu	Gln	Ala	Arg	Trp	Thr	Phe	Asp	Thr	Tyr	Arg	Arg	Trp		
		355					360					365					
Val	Tyr	Ile	Pro	Arg	Asp	Asn	His	Phe	Tyr	Ala	Asn	Ser	Ile	Leu	Gly		
	370					375					380						
Ser	Gln	Asn	Ser	Met	Ile	Val	Val	Lys	Gln	Gly	Leu	Ile	Asn	Asn	Met		
385				390						395					400		
Leu	Asn	Asn	Ala	Arg	Phe	Asp	Asp	Ile	Ala	Tyr	Asn	Asn	Phe	Trp	Val		
			405						410					415			
Ser	Gly	Val	Gly	Thr	Phe	Leu	Ala	Gln	Gln	Gly	Thr	Pro	Leu	Ser	Glu		
			420					425					430				
Glu	Phe	Ser	Tyr	Tyr	Ser	Arg	Gly	Thr	Ser	Val	Ala	Ile	Asp	Ala	Lys		
		435					440					445					
Pro	Arg	Gln	Asp	Phe	Ile	Leu	Gly	Ala	Ala	Phe	Ser	Lys	Ile	Val	Gly		
	450					455					460						
Lys	Thr	Lys	Ala	Ile	Lys	Lys	Met	His	Asn	Tyr	Phe	His	Lys	Gly	Ser		
465				470						475					480		
Glu	Tyr	Ser	Tyr	Gln	Ala	Ser	Val	Tyr	Gly	Gly	Lys	Phe	Leu	Tyr	Phe		
			485						490					495			
Leu	Leu	Asn	Lys	Gln	His	Gly	Trp	Ala	Leu	Pro	Phe	Leu	Ile	Gln	Gly		
			500					505									

Ala Ile Met Asn Cys Asn Ile Leu Met Tyr Asn Lys Leu Ala Leu Ala
610 615 620
Tyr Met Pro Ser Ile Tyr Arg Asn Asn Pro Val Cys Lys Tyr Arg Val
625 630 635 640
Leu Ser Ser Asn Glu Ala Gly Gln Val Ile Cys Gly Val Pro Thr Arg
645 650 655
Thr Ser Ala Arg Ala Glu Tyr Ser Thr Gln Leu Tyr Leu Gly Pro Phe
660 665 670
Trp Thr Leu Tyr Gly Asn Tyr Thr Ile Asp Val Gly Met Tyr Thr Leu
675 680 685
Ser Gln Met Thr Ser Cys Gly Ala Arg Met Ile Phe
690 695 700

<210> 346

<211> 37

<212> DNA

<213> Chlamydia trachomatis

<400> 346

gagagcggcc gctcatgaaa tttatgtcag ctactgc

37

<210> 347

<211> 37

<212> DNA

<213> Chlamydia trachomatis

<400> 347

gagagcggcc gottaccctg taattccagt gatggtc

37

<210> 348

<211> 1464

<212> DNA

<213> Chlamydia trachomatis

<400> 348

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accgttcata	tccggccctac	cgccttcctc	ggcttgggtg	ttgtcgacaa	caacggcaac	180
ggcgacagag	tccaacgcgt	ggtcgggagc	gctccggcgg	caagtctcgg	catctccacc	240
ggcgacgtga	tcacgcgcgt	cgacggcgct	ccgatcaact	cggccaccgc	gatggcggac	300
gcgcttaacg	ggcatcatcc	cggtgacgtc	atctcggtga	cctggcaaac	caagtccggc	360
ggcacgcgta	cagggaacgt	gacattggcc	gagggacccc	cggccgaatt	ctgcagatat	420
ccatcacact	ggcggccgct	catgaaattt	atgtcagcta	ctgctgtatt	tgctgcagta	480
ctctcctccg	ttactgaggc	gagctcgatc	caagatcaaa	taaagaatac	cgactgcaat	540
gttagcaaag	taggatattc	aacttctcaa	gcatttactg	atatgatgct	agcagacaac	600
acagagtatc	gagctgctga	tagtgtttca	ttctatgact	tttcgacatc	ttccggatta	660
cctagaaaac	atcttagtag	tagtagtgaa	gcttctccaa	cgacagaagg	agtgtcttca	720
tcttcatctg	gagaaaatac	tgagaattca	caagattcag	ctccctcttc	tggagaaact	780
gataagaaaa	cagaagaaga	actagacaat	ggcggaatca	tttatgctag	agagaaacta	840
actatctcag	aatctcagga	ctctctctct	aatccaagca	tagaactcca	tgacaatagt	900
tttttcttcg	gagaagggtga	agttatcttt	gatcacagag	ttgccctcaa	aaacggagga	960
gctattttatg	gagagaaaaga	ggtagtcttt	gaaaacataa	aatctctact	agtagaagta	1020
aatatctcgg	tcgagaaagg	gggtagcgtc	tatgcaaaag	aacgagtatc	tttagaaaat	1080
gttaccgaag	caaccttctc	ctccaatggt	ggggaacaag	gtggtggtgg	aatctattca	1140
gaacaagata	tgtaaatcag	tgattgcaac	aatgtacatt	tccaagggaa	tgctgcagga	1200
gcaacagcag	taaaacaatg	tctggatgaa	gaaatgatcg	tattgctcac	agaatgcgtt	1260
gatagcttat	ccgaagatac	actggatagc	actccagaaa	cggaacagac	taagtcaaat	1320

ggaaatcaag atgggttcgtc tgaacacaaa gatacacaag tatcagaatc accagaatca 1380
 actoctagcc ccgacgatgt tttaggtaaa ggtgggtgga tctatacaga aaaatctttg 1440
 accatcactg gaattacagg gtaa 1464

<210> 349

<211> 487

<212> PRT

<213> Chlamydia trachomatis

<400> 349

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 20 25 30
 Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
 35 40 45
 Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
 50 55 60
 Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
 65 70 75 80
 Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
 85 90 95
 Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
 100 105 110
 Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
 115 120 125
 Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
 130 135 140
 Arg Pro Leu Met Lys Phe Met Ser Ala Thr Ala Val Phe Ala Ala Val
 145 150 155 160
 Leu Ser Ser Val Thr Glu Ala Ser Ser Ile Gln Asp Gln Ile Lys Asn
 165 170 175
 Thr Asp Cys Asn Val Ser Lys Val Gly Tyr Ser Thr Ser Gln Ala Phe
 180 185 190
 Thr Asp Met Met Leu Ala Asp Asn Thr Glu Tyr Arg Ala Ala Asp Ser
 195 200 205
 Val Ser Phe Tyr Asp Phe Ser Thr Ser Ser Gly Leu Pro Arg Lys His
 210 215 220
 Leu Ser Ser Ser Ser Glu Ala Ser Pro Thr Thr Glu Gly Val Ser Ser
 225 230 235 240
 Ser Ser Ser Gly Glu Asn Thr Glu Asn Ser Gln Asp Ser Ala Pro Ser
 245 250 255
 Ser Gly Glu Thr Asp Lys Lys Thr Glu Glu Leu Asp Asn Gly Gly
 260 265 270
 Ile Ile Tyr Ala Arg Glu Lys Leu Thr Ile Ser Glu Ser Gln Asp Ser
 275 280 285
 Leu Ser Asn Pro Ser Ile Glu Leu His Asp Asn Ser Phe Phe Phe Gly
 290 295 300
 Glu Gly Glu Val Ile Phe Asp His Arg Val Ala Leu Lys Asn Gly Gly
 305 310 315 320
 Ala Ile Tyr Gly Glu Lys Glu Val Val Phe Glu Asn Ile Lys Ser Leu
 325 330 335
 Leu Val Glu Val Asn Ile Ser Val Glu Lys Gly Gly Ser Val Tyr Ala
 340 345 350
 Lys Glu Arg Val Ser Leu Glu Asn Val Thr Glu Ala Thr Phe Ser Ser
 355 360 365
 Asn Gly Gly Glu Gln Gly Gly Gly Gly Ile Tyr Ser Glu Gln Asp Met

370 375 380
 Leu Ile Ser Asp Cys Asn Asn Val His Phe Gln Gly Asn Ala Ala Gly
 385 390 395 400
 Ala Thr Ala Val Lys Gln Cys Leu Asp Glu Glu Met Ile Val Leu Leu
 405 410 415
 Thr Glu Cys Val Asp Ser Leu Ser Glu Asp Thr Leu Asp Ser Thr Pro
 420 425 430
 Glu Thr Glu Gln Thr Lys Ser Asn Gly Asn Gln Asp Gly Ser Ser Glu
 435 440 445
 Thr Lys Asp Thr Gln Val Ser Glu Ser Pro Glu Ser Thr Pro Ser Pro
 450 455 460
 Asp Asp Val Leu Gly Lys Gly Gly Gly Ile Tyr Thr Glu Lys Ser Leu
 465 470 475 480
 Thr Ile Thr Gly Ile Thr Gly
 485

<210> 350

<211> 37

<212> DNA

<213> Chlamydia trachomatis

<400> 350

gagagcggcc gctcgatata caagtatcag aatcacc

37

<210> 351

<211> 37

<212> DNA

<213> Chlamydia trachomatis

<400> 351

gagagcggcc gcttaagagg acgatgagac actctcg

37

<210> 352

<211> 1752

<212> DNA

<213> Chlamydia trachomatis

<400> 352

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cagggattcg	ccattccgat	cgggcaggcg	atggcgatcg	cgggccagat	caagcttccc	120
accgttcata	tcgggcctac	cgccttcctc	ggcttgggtg	ttgtcgacaa	caacggcaac	180
ggcgacagag	tccaacgcgt	ggtcgggagc	gctccggcgg	caagtctcgg	catctccacc	240
ggcgacgtga	tcaccgcggt	cgacggcgct	ccgatcaact	cggccaccgc	gatggcggac	300
gcgcttaacg	ggcatcatcc	cgggtgacgtc	atctcgggtga	cctggcaaac	caagtcgggc	360
ggcacgcgta	cagggaaacgt	gacattggcc	gagggacccc	cggccgaatt	ctgcagatat	420
ccatcacact	ggcggccgct	cgatacacia	gtatcagaat	caccagaatc	aactcctagc	480
cccgacgatg	tttttaggtaa	aggtgggtggt	atctatacag	aaaaatcttt	gaccatcact	540
ggaattacag	ggactataga	ttttgtcagt	aacatagcta	ccgattctgg	agcaggtgta	600
ttcactaaag	aaaacttgct	ttgcaccaac	acgaatagcc	tacagttttt	gaaaaactcg	660
gcaggtcaac	atggaggagg	agcctacgtt	actcaaacca	tgtctgttac	taatacaact	720
agtgaaagta	taactactcc	ccctctcgta	ggagaagtga	ttttctctga	aaatacagct	780
aaagggcacg	gtgggtggtat	ctgcactaac	aaactttctt	tatctaattt	aaaaacggtg	840
actctcacta	aaaactctgc	aaaggagtct	ggaggagcta	tttttacaga	tctagcgtct	900
ataccaacaa	cagatacccc	agagtcttct	acccctctct	cctcctcgcc	tgcaagcact	960
cccgaagtag	ttgcttctgc	taaaataaat	cgattctttg	cctctacggc	agaaccggca	1020
gccccttctc	taacagaggc	tgagtctgat	caaacggatc	aaacagaaac	ttctgatact	1080
aatagcgata	tagacgtgtc	gattgagaac	atthtgaatg	tcgctatcaa	tcaaaacact	1140

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tctgogaaaa aaggaggggc tatttacggg aaaaaagcta aactttcccg tattaacaat 1200
cttgaacttt caggggaattc atcccaggat gtaggaggag gtctctgttt aactgaaagc 1260
gtagaatttg atgcaattgg atcgctctta tcccactata actctgctgc taaagaaggt 1320
gggggttattc attctaaaac ggttactcta tctaacctca agtctacctt cacttttgca 1380
gataaactg ttaaagcaat agtagaaagc actcctgaag ctccagaaga gattcctcca 1440
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gctaacacta accttgaagg atctcaaggg gatactgctg atacaggac tgggtgtgtt 1560
aacaatgagt ctcaagacac atcagatact ggaaacgctg aatctggaga acaactacaa 1620
gattctacac aatctaata agaaaatacc cttcccaata gtagtattga tcaatctaac 1680
gaaaacacag acgaatcatc tgatagccac actgaggaaa taactgacga gagtgtctca 1740
tcgtcctctt aa 1752

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<210> 353

<211> 583

<212> PRT

<213> Chlamydia trachomatis

<400> 353

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20     25     30
Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
35     40     45
Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
50     55     60
Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
65     70     75
Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
85     90     95
Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
100    105    110
Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
115    120    125
Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
130    135    140
Arg Pro Leu Asp Thr Gln Val Ser Glu Ser Pro Glu Ser Thr Pro Ser
145    150    155
Pro Asp Asp Val Leu Gly Lys Gly Gly Gly Ile Tyr Thr Glu Lys Ser
165    170    175
Leu Thr Ile Thr Gly Ile Thr Gly Thr Ile Asp Phe Val Ser Asn Ile
180    185    190
Ala Thr Asp Ser Gly Ala Gly Val Phe Thr Lys Glu Asn Leu Ser Cys
195    200    205
Thr Asn Thr Asn Ser Leu Gln Phe Leu Lys Asn Ser Ala Gly Gln His
210    215    220
Gly Gly Gly Ala Tyr Val Thr Gln Thr Met Ser Val Thr Asn Thr Thr
225    230    235
Ser Glu Ser Ile Thr Thr Pro Pro Leu Val Gly Glu Val Ile Phe Ser
245    250    255
Glu Asn Thr Ala Lys Gly His Gly Gly Ile Cys Thr Asn Lys Leu
260    265    270
Ser Leu Ser Asn Leu Lys Thr Val Thr Leu Thr Lys Asn Ser Ala Lys
275    280    285
Glu Ser Gly Gly Ala Ile Phe Thr Asp Leu Ala Ser Ile Pro Thr Thr
290    295    300
Asp Thr Pro Glu Ser Ser Thr Pro Ser Ser Ser Ser Pro Ala Ser Thr

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<210> 354
<211> 39
<212> DNA
<213> Chlamydia trachomatis
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39

36

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<210> 356
<211> 2052
<212> DNA
<213> Chlamydia trachomatis
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<400> 356

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cagggattcg ccattccgat cgggcaggcg atggcgatcg cgggccagat caagcttccc      120
accgttcata tcgggcctac cgccttcctc ggcttgggtg ttgtcgacaa caacggcaac      180
ggcgacagag tccaacgcgt ggtcgggagc gctccggcgg caagtctcgg catctccacc      240
ggcgacgtga tcaccgcggt cgacggcgct ccgatcaact cggccaccgc gatggcggac      300
gcgcttaacg ggcatacatc cgttgacgtc atctcgggtg cctggcaaac caagtcgggc      360
ggcacgcgta cagggaacgt gacattggcc gagggacccc cggccgaatt ctgcagatat      420
ccatcacact ggcggccgct cgatcaatct aacgaaaaca cagacgaatc atctgatagc      480
cacactgagg aaataactga cgagagtgtc tcactgtcct ctaaaagtgg atcatctact      540
cctcaagatg gaggagcagc ttcttcaggg gctccctcag gagatcaatc tatctctgca      600
aacgcttggt tagctaaaag ctatgctgcg agtactgata gctccctgtt atctaattct      660
tcaggttcag acgttactgc atcttctgat aatccagact cttcctcatc tggagatagc      720
gttgagact ctgaaggacc gactgagcca gaagctgggt ctacaacaga aactcctact      780
ttaataggag caggwgctat ctatggagaa actgttaaga ttgagaactt ctctggccaa      840
ggaatatttt ctggaacaaa agctatcgat aacaccacag aaggctcctc ttccaaatct      900
aacgtcctcg gaggtgcggt ctatgctaaa acattgttta atctcgatag cgggagctct      960
agacgaactg tcaccttctc cggaataact gtctcttctc aatctacaac aggtcaggtt     1020
gctggaggag ctatctactc tcctactgta accattgcta ctcctgtagt attttctaaa     1080
aactctgcaa caaacaatgc taataacgct acagatactc agagaaaaga cacctttgga     1140
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gttgctgacc tcggatctgc tattgggttg gtgccagaca cacaaaatac agaaacagtg     1260
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tacgcacctg tcgtttccat taaagcctat actgcgacat ttaacccaaa cagatctcta     1380
gaagaaggaa gcgcgattta ctttacaaaa gaagcatcta ttgagtcttt aggtctctgtt     1440
ctcttcacag gaaacttagt aaccccaacg ctaagcaca ctacagaagg cacaccagcc     1500
acaacctcag gagatgtaac aaaaataggt gctgctatct ttggacaaat agcaagctca     1560
aacgatctc agacggataa ccttcccctg aaactcattg cttcaggagg aaatatttgt     1620
ttccgaaaca atgaataccg tcctacttct tctgataccg gaacctctac tttctgtagt     1680
attgcgggag atgttaaat aaccatgcaa gctgcaaaag ggaaaacgat cagtttcttt     1740
gatgcaatcc ggacctctac taagaaaaca ggtacacagg caactgccta cgatactctc     1800
gatattaata aatctgagga ttcagaaact gtaactctg cgtttacagg aacgattctg     1860
ttctcctctg aattacatga aaataaatcc tatattccac aaaacgtagt tctacacagt     1920
ggatctcttg tattgaagcc aaataccgag cttcatgtca tttcttttga gcagaaagaa     1980
ggctcttctc tcgttatgac acctggatct gttctttcga accagaactgt tgctgatgga     2040
gctttggtct aa                                     2052

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<210> 357

<211> 683

<212> PRT

<213> Chlamydia trachomatis

<400> 357

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Ser Gln Gly Gly Gln Gly Phe Ala Ile Pro Ile Gly Gln Ala Met Ala
 20          25          30
Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
 35          40          45
Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
 50          55          60
Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
 65          70          75          80
Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
 85          90          95
Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
100          105          110

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Val	Thr	Trp	Gln	Thr	Lys	Ser	Gly	Gly	Thr	Arg	Thr	Gly	Asn	Val	Thr
		115					120					125			
Leu	Ala	Glu	Gly	Pro	Pro	Ala	Glu	Phe	Cys	Arg	Tyr	Pro	Ser	His	Trp
	130					135					140				
Arg	Pro	Leu	Asp	Gln	Ser	Asn	Glu	Asn	Thr	Asp	Glu	Ser	Ser	Asp	Ser
145					150					155					160
His	Thr	Glu	Glu	Ile	Thr	Asp	Glu	Ser	Val	Ser	Ser	Ser	Ser	Lys	Ser
				165					170					175	
Gly	Ser	Ser	Thr	Pro	Gln	Asp	Gly	Gly	Ala	Ala	Ser	Ser	Gly	Ala	Pro
			180					185					190		
Ser	Gly	Asp	Gln	Ser	Ile	Ser	Ala	Asn	Ala	Cys	Leu	Ala	Lys	Ser	Tyr
		195					200					205			
Ala	Ala	Ser	Thr	Asp	Ser	Ser	Pro	Val	Ser	Asn	Ser	Ser	Gly	Ser	Asp
	210					215					220				
Val	Thr	Ala	Ser	Ser	Asp	Asn	Pro	Asp	Ser	Ser	Ser	Ser	Gly	Asp	Ser
225					230					235					240
Ala	Gly	Asp	Ser	Glu	Gly	Pro	Thr	Glu	Pro	Glu	Ala	Gly	Ser	Thr	Thr
				245					250					255	
Glu	Thr	Pro	Thr	Leu	Ile	Gly	Gly	Gly	Ala	Ile	Tyr	Gly	Glu	Thr	Val
			260					265					270		
Lys	Ile	Glu	Asn	Phe	Ser	Gly	Gln	Gly	Ile	Phe	Ser	Gly	Asn	Lys	Ala
		275					280						285		
Ile	Asp	Asn	Thr	Thr	Glu	Gly	Ser	Ser	Ser	Lys	Ser	Asn	Val	Leu	Gly
	290					295					300				
Gly	Ala	Val	Tyr	Ala	Lys	Thr	Leu	Phe	Asn	Leu	Asp	Ser	Gly	Ser	Ser
305					310					315					320
Arg	Arg	Thr	Val	Thr	Phe	Ser	Gly	Asn	Thr	Val	Ser	Ser	Gln	Ser	Thr
				325					330					335	
Thr	Gly	Gln	Val	Ala	Gly	Gly	Ala	Ile	Tyr	Ser	Pro	Thr	Val	Thr	Ile
			340					345					350		
Ala	Thr	Pro	Val	Val	Phe	Ser	Lys	Asn	Ser	Ala	Thr	Asn	Asn	Ala	Asn
		355					360					365			
Asn	Ala	Thr	Asp	Thr	Gln	Arg	Lys	Asp	Thr	Phe	Gly	Gly	Ala	Ile	Gly
	370					375					380				
Ala	Thr	Ser	Ala	Val	Ser	Leu	Ser	Gly	Gly	Ala	His	Phe	Leu	Glu	Asn
385					390					395				400	
Val	Ala	Asp	Leu	Gly	Ser	Ala	Ile	Gly	Leu	Val	Pro	Asp	Thr	Gln	Asn
				405					410					415	
Thr	Glu	Thr	Val	Lys	Leu	Glu	Ser	Gly	Ser	Tyr	Tyr	Phe	Glu	Lys	Asn
			420					425					430		
Lys	Ala	Leu	Lys	Arg	Ala	Thr	Ile	Tyr	Ala	Pro	Val	Val	Ser	Ile	Lys
		435					440					445			
Ala	Tyr	Thr	Ala	Thr	Phe	Asn	Gln	Asn	Arg	Ser	Leu	Glu	Glu	Gly	Ser
	450					455				460					
Ala	Ile	Tyr	Phe												

565 570 575
 Ile Ser Phe Phe Asp Ala Ile Arg Thr Ser Thr Lys Lys Thr Gly Thr
 580 585 590
 Gln Ala Thr Ala Tyr Asp Thr Leu Asp Ile Asn Lys Ser Glu Asp Ser
 595 600 605
 Glu Thr Val Asn Ser Ala Phe Thr Gly Thr Ile Leu Phe Ser Ser Glu
 610 615 620
 Leu His Glu Asn Lys Ser Tyr Ile Pro Gln Asn Val Val Leu His Ser
 625 630 635 640
 Gly Ser Leu Val Leu Lys Pro Asn Thr Glu Leu His Val Ile Ser Phe
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 Ser Asn Gln Thr Val Ala Asp Gly Ala Leu Val
 675 680

<210> 358
 <211> 1248
 <212> DNA
 <213> Chlamydia

<400> 358
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 gctttatttg ctactctctt cagagaagag ctctctggat taacccctgc tctgggtctcc 180
 tcctatcaag tttcgggaaga cgggcgggtt tatcgttttt gtattcgtaa agatgctaag 240
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 caagctgggc gatattccct actttttgaa aagctatctt ttcgagcctc ttcttcttcg 360
 gaaatcctta ttgaactcaa agaacccgag cctcaactat tggcgatatt agcctctccg 420
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 catgtggaat tacattccat agactttcgc atcattccca acatttacac agctctacac 600
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 aaaattactt tgatatatcc caataatatt acgcgctgtc agcgtttggc cgagggtattg 960
 caagaacaat gccgagacgc aggtatccag ctgactcttg aaggactcga ataccatgta 1020
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 <211> 1311
 <212> DNA
 <213> Chlamydia

<400> 359
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 gatgatctc gctctctttc tccagaaaaa ggagaaaatg ctttccattt ttctttgtcc 180
 aagcctttat ttgctactct cttcagagaa gagctctctg gattaacccc tgctctggtc 240
 tcctcctatc aagtttcgga agacgggcgg ttttatcggt tttgtattcg taaagatgct 300
 aagtggagt acggctctct tttacttgca gaagatgtaa tagctgcttg ggaacacact 360

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tcggaaatcc ttattgaact caaagaaccc gagcctcaac tattggcgat attagcctct 480
ccgttttttg ctgtgtatcg tccagaaaat ccttttcttt cttctggacc ttttatgcc 540
aaaacctatg tgcaagggca aacgctcggt ctacaaaaaa acccttatta ctatgaccat 600
gcgcatgtgg aattacattc catagacttt cgcattcatt ccaacattta cacagctcta 660
cacctcttaa gaagaggtga cgtggattgg gtggggcagc cttggcacca agggattcct 720
tttgagcttc ggactacctc tgctctctac acccattacc ctgtagatgg cacattctgg 780
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<210> 360

<211> 813

<212> DNA

<213> Chlamydia

<400> 360

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atccttgggg caacatcaac acctgtcgca gccaaaatga cagcttctga tggaaatct 180
ttaacagtct ccaataatcc atcaaccaat gcttctatta caattggttt ggatgcggaa 240
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ggtttgttga aagcttttaa caactttcca atcactaata aaattcaatg caacgggta 420
ttcactccca ggaacattga aacttttatta ggaggaactg aaataggaaa attcacagtc 480
acacccaaaa gctctgggag catgttctta gtctcagcag atattattgc atcaagaatg 540
gaaggcggcg ttgttctagc ttttgtaaga gaaggtgatt ctaagcccta cgcgattagt 600
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ggattgactc cgacaacgta ttcattacgt gtaggcgggt tagaaagcgg tgtgggtatg 720
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<210> 361

<211> 750

<212> DNA

<213> Chlamydia

<400> 361

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gttgtctctt caaagattgt gagtttatgt gaaggcgctg tcgctgatgc aagaatgtgc 180
aaagcagagt tgataaaaaa agaagcggat gcttatttgt tttgtgagaa aagcgggata 240
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gaccagcctt ttgttttata tcctaaagat attttgggat cgtgtaatcg catcggagaa 360
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ccgttagcgg tgatagagca ggcacctaat atggtctacc attcatatcc tacttctcga 660
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gcgggttacgt ggagtcaaga aaagaaatag

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<210> 362
 <211> 412
 <212> PRT
 <213> Chlamydia

<400> 362

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Ile	His	Asp	Asp	Pro	Arg	Ser	Leu	Ser	Pro	Glu	Lys	Gly	Glu	Asn	Ala
			20					25					30		
Phe	His	Phe	Ser	Leu	Ser	Lys	Ala	Leu	Phe	Ala	Thr	Leu	Phe	Arg	Glu
		35					40					45			
Glu	Leu	Ser	Gly	Leu	Thr	Pro	Ala	Leu	Val	Ser	Ser	Tyr	Gln	Val	Ser
	50					55					60				
Glu	Asp	Gly	Arg	Phe	Tyr	Arg	Phe	Cys	Ile	Arg	Lys	Asp	Ala	Lys	Trp
	65				70					75					80
Ser	Asp	Gly	Ser	Leu	Leu	Leu	Ala	Glu	Asp	Val	Ile	Ala	Ala	Trp	Glu
				85					90					95	
His	Thr	Lys	Gln	Ala	Gly	Arg	Tyr	Ser	Leu	Leu	Phe	Glu	Lys	Leu	Ser
			100					105					110		
Phe	Arg	Ala	Ser	Ser	Ser	Ser	Glu	Ile	Leu	Ile	Glu	Leu	Lys	Glu	Pro
		115					120					125			
Glu	Pro	Gln	Leu	Leu	Ala	Ile	Leu	Ala	Ser	Pro	Phe	Phe	Ala	Val	Tyr
	130					135					140				
Arg	Pro	Glu	Asn	Pro	Phe	Leu	Ser	Ser	Gly	Pro	Phe	Met	Pro	Lys	Thr
	145				150					155					160
Tyr	Val	Gln	Gly	Gln	Thr	Leu	Val	Leu	Gln	Lys	Asn	Pro	Tyr	Tyr	Tyr
				165					170					175	
Asp	His	Ala	His	Val	Glu	Leu	His	Ser	Ile	Asp	Phe	Arg	Ile	Ile	Pro
			180					185					190		
Asn	Ile	Tyr	Thr	Ala	Leu	His	Leu	Leu	Arg	Arg	Gly	Asp	Val	Asp	Trp
		195					200					205			
Val	Gly	Gln	Pro	Trp	His	Gln	Gly	Ile	Pro	Phe	Glu	Leu	Arg	Thr	Thr
	210					215					220				
Ser	Ala	Leu	Tyr	Thr	His	Tyr	Pro	Val	Asp	Gly	Thr	Phe	Trp	Leu	Ile
	225				230					235					240
Leu	Asn	Pro	Lys	Asp	Pro	Val	Leu	Ser	Ser	Leu	Ser	Asn	Arg	Gln	Arg
				245					250					255	
Leu	Ile	Ala	Ala	Ile	Gln	Lys	Glu	Lys	Leu	Val	Lys	Gln	Ala	Leu	Gly
			260					265					270		
Thr	Gln	Tyr	Arg	Val	Ala	Glu	Ser	Ser	Pro	Ser	Pro	Glu	Gly	Ile	Ile
		275				280						285			
Ala	His	Gln	Glu	Ala	Ser	Thr	Pro	Phe	Pro	Gly	Lys	Ile	Thr	Leu	Ile
	290					295					300				
Tyr	Pro	Asn	Asn	Ile	Thr	Arg	Cys	Gln	Arg	Leu	Ala	Glu	Val	Leu	Gln
	305				310					315					320
Glu	Gln	Cys	Arg	Asp	Ala	Gly	Ile	Gln	Leu	Thr	Leu	Glu	Gly	Leu	Glu
				325					330					335	
Tyr	His	Val	Phe	Val	Gln	Lys	Arg	Ala	Thr	Gln	Asp	Phe	Ser	Val	Ser
			340					345					350		
Thr	Ala	Thr	Ser	Ile	Ala	Phe	His	Pro	Leu	Ala	Lys	Ser	Lys	Phe	Asp
		355					360					365			
Gln	Thr	Ala	Leu	Asp	Asn	Phe	Thr	Cys	Leu	Pro	Leu	Tyr	His	Ile	Glu
	370					375					380				
Tyr	Asp	Tyr	Ile	Leu	Ser	Arg	Pro	Leu	Asp	Gln	Ile	Val	His	Tyr	Pro
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RefSeq: NC_013236.1

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<210> 363
<211> 433
<212> PRT
<213> Chlamydia
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<400>	363														
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Ile	Ile	Ala	Phe	Leu	Thr	Val	Gly	Cys	Ser	Phe	Ser	Pro	Pro	Glu	Ser
			20					25					30		
Gly	Leu	Ile	Ile	Ala	Ile	His	Asp	Asp	Pro	Arg	Ser	Leu	Ser	Pro	Glu
		35					40					45			
Lys	Gly	Glu	Asn	Ala	Phe	His	Phe	Ser	Leu	Ser	Lys	Ala	Leu	Phe	Ala
	50					55					60				
Thr	Leu	Phe	Arg	Glu	Glu	Leu	Ser	Gly	Leu	Thr	Pro	Ala	Leu	Val	Ser
	65				70					75				80	
Ser	Tyr	Gln	Val	Ser	Glu	Asp	Gly	Arg	Phe	Tyr	Arg	Phe	Cys	Ile	Arg
				85					90					95	
Lys	Asp	Ala	Lys	Trp	Ser	Asp	Gly	Ser	Leu	Leu	Leu	Ala	Glu	Asp	Val
			100					105					110		
Ile	Ala	Ala	Trp	Glu	His	Thr	Lys	Gln	Ala	Gly	Arg	Tyr	Ser	Leu	Leu
		115					120					125			
Phe	Glu	Lys	Leu	Ser	Phe	Arg	Ala	Ser	Ser	Ser	Ser	Glu	Ile	Leu	Ile
	130					135						140			
Glu	Leu	Lys	Glu	Pro	Glu	Pro	Gln	Leu	Leu	Ala	Ile	Leu	Ala	Ser	Pro
145					150					155					160
Phe	Phe	Ala	Val	Tyr	Arg	Pro	Glu	Asn	Pro	Phe	Leu	Ser	Ser	Gly	Pro
				165					170					175	
Phe	Met	Pro	Lys	Thr	Tyr	Val	Gln	Gly	Gln	Thr	Leu	Val	Leu	Gln	Lys
			180					185					190		
Asn	Pro	Tyr	Tyr	Tyr	Asp	His	Ala	His	Val	Glu	Leu	His	Ser	Ile	Asp
		195					200					205			
Phe	Arg	Ile	Ile	Pro	Asn	Ile	Tyr	Thr	Ala	Leu	His	Leu	Leu	Arg	Arg
	210					215					220				
Gly	Asp	Val	Asp	Trp	Val	Gly	Gln	Pro	Trp	His	Gln	Gly	Ile	Pro	Phe
225					230					235				240	
Glu	Leu	Arg	Thr	Thr	Ser	Ala	Leu	Tyr	Thr	His	Tyr	Pro	Val	Asp	Gly
				245					250					255	
Thr	Phe	Trp	Leu	Ile	Leu	Asn	Pro	Lys	Asp	Pro	Val	Leu	Ser	Ser	Leu
			260					265					270		
Ser	Asn	Arg	Gln	Arg	Leu	Ile	Ala	Ala	Ile	Gln	Lys	Glu	Lys	Leu	Val
		275					280					285			
Lys	Gln	Ala	Leu	Gly	Thr	Gln	Tyr	Arg	Val	Ala	Glu	Ser	Ser	Pro	Ser
	290					295					300				
Pro	Glu	Gly	Ile	Ile	Ala	His	Gln	Glu	Ala	Ser	Thr	Pro	Phe	Pro	Gly
305					310					315					320
Lys	Ile	Thr	Leu	Ile	Tyr	Pro	Asn	Asn	Ile	Thr	Arg	Cys	Gln	Arg	Leu
			325						330					335	
Ala	Glu	Val	Leu	Gln	Glu	Gln	Cys	Arg	Asp	Ala	Gly	Ile	Gln	Leu	Thr
			340					345							

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<210> 364
<211> 264
<212> PRT
<213> Chlamydia
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<210> 365
<211> 249
<212> PRT
<213> Chlamydia
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Val	Phe	Ala	His 20	Asp	Ser	Leu	Gln	Glu 25	Ile	Leu	Gln	Glu	Ala 30	Leu	Pro
Pro	Leu	Gln 35	Glu	Arg	Ser	Val	Val 40	Val	Val	Ser	Ser	Lys 45	Ile	Val	Ser
Leu	Cys 50	Glu	Gly	Ala	Val	Ala 55	Asp	Ala	Arg	Met	Cys 60	Lys	Ala	Glu	Leu
Ile 65	Lys	Lys	Glu	Ala 70	Asp	Ala	Tyr	Leu	Phe	Cys 75	Glu	Lys	Ser	Gly 80	Ile
Tyr	Leu	Thr	Lys 85	Lys	Glu	Gly	Ile	Leu	Ile 90	Pro	Ser	Ala	Gly 95	Ile	Asp
Glu	Ser	Asn 100	Thr	Asp	Gln	Pro	Phe	Val 105	Leu	Tyr	Pro	Lys	Asp 110	Ile	Leu
Gly	Ser	Cys 115	Asn	Arg	Ile	Gly	Glu 120	Trp	Leu	Arg	Asn	Tyr 125	Phe	Arg	Val
Lys	Glu 130	Leu	Gly	Val	Ile 135	Ile	Thr	Asp	Ser	His	Thr 140	Thr	Pro	Met	Arg
Arg 145	Gly	Val	Leu	Gly 150	Ile	Gly	Leu	Cys	Trp	Tyr 155	Gly	Phe	Ser	Pro	Leu
His	Asn	Tyr	Ile 165	Gly	Ser	Leu	Asp	Cys 170	Phe	Gly	Arg	Pro	Leu	Gln 175	Met
Thr	Gln	Ser 180	Asn	Leu	Val	Asp	Ala 185	Leu	Ala	Val	Ala	Ala 190	Val	Val	Cys
Met	Gly 195	Glu	Gly	Asn	Glu	Gln	Thr 200	Pro	Leu	Ala	Val	Ile 205	Glu	Gln	Ala
Pro	Asn 210	Met	Val	Tyr	His 215	Ser	Tyr	Pro	Thr	Ser	Arg 220	Glu	Glu	Tyr	Cys
Ser 225	Leu	Arg	Ile	Asp 230	Glu	Thr	Glu	Asp	Leu	Tyr 235	Gly	Pro	Phe	Leu	Gln 240
Ala	Val	Thr	Trp 245	Ser	Gln	Glu	Lys	Lys							

<213> Chlamydia pneumoniae

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<210> 367

<211> 888

<212> DNA

<213> *Chlamydia pneumoniae*

<400> 367

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<210> 368

<211> 237

<212> DNA

<213> *Chlamydia pneumoniae*

<400> 368

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<210> 369

<211> 1437

<212> DNA

<213> Chlamydia pneumoniae

<400> 369

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<210> 370

<211> 774

<212> DNA

<213> Chlamydia pneumoniae

<400> 370

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<211> 576
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 <213> Chlamydia pneumoniae

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 <212> DNA
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 <212> DNA
 <213> Chlamydia pneumoniae

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 <211> 5172
 <212> DNA
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<210> 375

<211> 5172

<212> DNA

<213> Chlamydia pneumoniae

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<211> 3759

<212> DNA

<213> Chlamydia pneumoniae

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<210> 377

<211> 675

<212> DNA

<213> Chlamydia pneumoniae

<400> 377

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<210> 378

<211> 1671

<212> DNA

<213> Chlamydia pneumoniae

<400> 378

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<210> 379

<211> 1386

<212> DNA

<213> Chlamydia pneumoniae

<400> 379

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<210> 380

<211> 1635

<213> Chlamydia pneumoniae

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<211> 1995

<213> Chlamydia pneumoniae

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<210> 382

<211> 987

<212> DNA

<213> Chlamydia pneumoniae

<400> 382

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<210> 383

<211> 654

<212> DNA

<213> Chlamydia pneumoniae

<400> 383

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<211> 813
<212> DNA
<213> Chlamydia pneumoniae
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<210> 385
<211> 1956
<212> DNA
<213> Chlamydia pneumoniae
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acgcctcctc	cacccacgtt	tgatgattat	aagactcaag	cgcaaacagc	ttacgatact	360
atctttacct	caacatcact	agctgcata	caggtcgctt	tggtgagcct	ccaggatgct	420
gtcactaata	taaaggatac	agcgcgtact	gatgaggaaa	ccgcaatcgc	tcgggagtg	480
gaaactaaga	atgccgatgc	agttaaagtt	ggcgcgcaaa	ttacagaatt	agcgaaatat	540
gcttcggata	accaagcgat	tcttgactct	ttaggtaaac	tgacttctct	cgacctctta	600
caggctgctc	ttctccaatc	tgtagcaaac	aataacaaag	cagctgagct	tcttaagag	660
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cagacagatg	ctacagcgac	acagatagag	aaagatggaa	atgcgattag	ggatgcatat	780
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aaaaagttcc	ccgactctcc	aattcttcaa	gaagcggaac	aaatggaatc	acaggctgag	960
aaagatctta	aaaatatcaa	acctgcagat	ggttctgatg	ttccaaatcc	aggaaactaca	1020
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gatgatgctg	aaaatgagac	cgcttccatt	ttgatgtctg	ggtttcgtca	gatgattcac	1140
atgttcaata	cggaaaatcc	tgattctcaa	gctgcccaac	aggagctcgc	agcacaagct	1200
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cagatcgctt	ctgctcgtgt	tgtgagcgca	ggagttctct	ccgcttcgca	aagttctata	1380
gggtcatctg	taaaacagct	ttacaagacc	tcaaatctca	caggttctga	ttataaaaaca	1440
cagatatcag	caggttatga	tgcttacaaa	tccatcaatg	atgcctatgg	tagggcacga	1500
aatgatgcga	ctcgtgatgt	gataaacaat	gtaagtaccc	ccgctctcac	acgatccggt	1560

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<210> 386

<211> 805

<212> PRT

<213> *Chlamydia pneumoniae*

<400> 386

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Glu Gly Leu Gln Ala Val Arg Glu Arg Pro Gly Met Tyr Ile Gly Asp
      20              25              30

Thr Gly Ile Thr Gly Leu His His Leu Val Tyr Glu Val Val Asp Asn
      35              40              45

Ser Ile Asp Glu Ala Met Ala Gly Tyr Cys Ser Arg Ile Asp Val Arg
      50              55              60

Ile Leu Glu Asp Gly Gly Ile Val Ile Val Asp Asn Gly Arg Gly Ile
      65              70              75              80

Pro Ile Glu Val His Glu Arg Glu Ser Ala Lys Gln Gly Arg Glu Val
      85              90              95

Ser Ala Leu Glu Val Val Leu Thr Val Leu His Ala Gly Gly Lys Phe
      100             105             110

Asp Lys Asp Ser Tyr Lys Val Ser Gly Gly Leu His Gly Val Gly Val
      115             120             125

Ser Cys Val Asn Ala Leu Ser Glu Lys Leu Val Ala Thr Val Phe Lys
      130             135             140

Asp Lys Lys Cys Tyr Gln Met Glu Phe Ser Arg Gly Ile Pro Val Thr
      145             150             155             160

Pro Leu Gln Tyr Val Ser Val Ser Asp Arg Gln Gly Thr Glu Ile Val
      165             170             175

Phe Tyr Pro Asp Pro Lys Ile Phe Ser Thr Cys Thr Phe Asp Arg Ser
      180             185             190

Ile Leu Met Lys Arg Leu Arg Glu Leu Ala Phe Leu Asn Arg Gly Ile
      195             200             205

Thr Ile Val Phe Glu Asp Asp Arg Asp Val Ser Phe Asp Lys Val Thr
      210             215             220

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T0340 "CE" T4350

Phe Phe Tyr Glu Gly Gly Ile Gln Ser Phe Val Ser Tyr Leu Asn Gln
 225 230 235 240
 Asn Lys Glu Ser Leu Phe Ser Glu Pro Ile Tyr Ile Cys Gly Thr Arg
 245 250 255
 Val Gly Asp Asp Gly Glu Ile Glu Phe Glu Ala Ala Leu Gln Trp Asn
 260 265 270
 Ser Gly Tyr Ser Glu Leu Val Tyr Ser Tyr Ala Asn Asn Ile Pro Thr
 275 280 285
 Arg Gln Gly Gly Thr His Leu Thr Gly Phe Ser Thr Ala Leu Thr Arg
 290 295 300
 Val Ile Asn Thr Tyr Ile Lys Ala His Asn Leu Ala Lys Asn Asn Lys
 305 310 315 320
 Leu Ala Leu Thr Gly Glu Asp Ile Arg Glu Gly Leu Thr Ala Val Ile
 325 330 335
 Ser Val Lys Val Pro Asn Pro Gln Phe Glu Gly Gln Thr Lys Gln Lys
 340 345 350
 Leu Gly Asn Ser Asp Val Ser Ser Val Ala Gln Gln Val Val Gly Glu
 355 360 365
 Ala Leu Thr Ile Phe Phe Glu Glu Asn Pro Gln Ile Ala Arg Met Ile
 370 375 380
 Val Asp Lys Val Phe Val Ala Ala Gln Ala Arg Glu Ala Ala Lys Lys
 385 390 395 400
 Ala Arg Glu Leu Thr Leu Arg Lys Ser Ala Leu Asp Ser Ala Arg Leu
 405 410 415
 Pro Gly Lys Leu Ile Asp Cys Leu Glu Lys Asp Pro Glu Lys Cys Glu
 420 425 430
 Met Tyr Ile Val Glu Gly Asp Ser Ala Gly Gly Ser Ala Lys Gln Gly
 435 440 445
 Arg Asp Arg Arg Phe Gln Ala Ile Leu Pro Ile Arg Gly Lys Ile Leu
 450 455 460
 Asn Val Glu Lys Ala Arg Leu Gln Lys Ile Phe Gln Asn Gln Glu Ile
 465 470 475 480
 Gly Thr Ile Ile Ala Ala Leu Gly Cys Gly Ile Gly Ala Asp Asn Phe
 485 490 495
 Asn Leu Ser Lys Leu Arg Tyr Arg Arg Ile Ile Ile Met Thr Asp Ala
 500 505 510
 Asp Val Asp Gly Ser His Ile Arg Thr Leu Leu Leu Thr Phe Phe Tyr
 515 520 525

$\langle 210 \rangle$	387
$\langle 211 \rangle$	295

<213> Chlamydia pneumoniae

Met Glu Lys Leu Leu Val Thr Asp Ile Asp Gly Thr Ile Thr His Gln
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Ser His His Leu Asp Lys Lys Val Tyr Glu Arg Leu Tyr Ala Leu His
20 25 30

Gln Ala Gly Trp Lys Leu Phe Phe Leu Thr Gly Arg Tyr Tyr Lys Tyr
35 40 45

Ala Ala Arg Leu Phe Ser Asp Phe Asp Ala Pro Tyr Leu Leu Gly Cys
50 55 60

Gln Asn Gly Ala Ser Val Trp Ser Ser Thr Ser Ser Asn Leu Leu Tyr
65 70 75 80

Ser Lys Ser Leu Pro Ser Asp Leu Leu Cys Ile Leu Gln Asp Cys Met
85 90 95

Glu Gly Ala Thr Ala Leu Phe Ser Val Glu Ser Gly Ala Pro Tyr Gly
100 105 110

Asp His Tyr Tyr Arg Phe Ser Pro Thr Pro Ile Ala Gln Asp Leu His
115 120 125

Glu Tyr Val Asp Pro Arg Tyr Phe Pro Asn Ala Lys Glu Arg Glu Ile
130 135 140

Leu Phe Glu Thr Arg Ser Leu Lys Asp Asp Tyr Ala Phe Pro Ser Phe
145 150 155 160

Ala Ala Ala Lys Val Phe Gly Leu Arg Asp Glu Val Ile Arg Ile Gln
165 170 175

Lys Glu Leu Glu Arg Gln Glu Ala Leu Thr Ser Val Ala Thr Met Thr
180 185 190

Leu Met Arg Trp Pro Phe Asp Phe Arg Tyr Ala Ile Leu Phe Leu Thr
195 200 205

Asp Lys Ser Val Ser Lys Gly Lys Ala Leu Asp Arg Val Val Asn Ile
210 215 220

Leu Tyr Asp Gly Lys Lys Pro Phe Val Met Ala Ser Gly Asp Asp Ala
225 230 235 240

Asn Asp Leu Asp Leu Ile Glu Arg Gly Asp Phe Lys Ile Val Met Ser
245 250 255

Ser Ala Pro Glu Glu Met His Val His Ala Asp Phe Leu Ala Pro Pro
260 265 270

Ala Asp Lys Asn Gly Ile Leu Ser Ala Trp Glu Ala Gly Val Arg Tyr
275 280 285

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			20					25					30			
Lys	Pro	Val	Gln	Arg	Arg	Leu	Leu	Trp	Thr	Leu	Phe	Leu	Met	Asp	Asp	
		35					40					45				
Gly	Lys	Met	His	Lys	Val	Ala	Asn	Ile	Ala	Gly	Arg	Thr	Met	Ala	Leu	
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His	Pro	His	Gly	Asp	Ala	Pro	Ile	Val	Glu	Ala	Leu	Val	Val	Leu	Ala	
65					70					75					80	
Asn	Lys	Gly	Tyr	Leu	Ile	Asp	Thr	Gln	Gly	Asn	Phe	Gly	Asn	Pro	Leu	
				85					90					95		
Thr	Gly	Asp	Pro	His	Ala	Ala	Ala	Arg	Tyr	Ile	Glu	Ala	Arg	Leu	Ser	
			100					105					110			
Pro	Leu	Ala	Arg	Glu	Thr	Leu	Phe	Asn	Thr	Asp	Leu	Ile	Ala	Phe	His	
		115					120					125				

Asp	Ser	Tyr	Asp	Gly	Arg	Glu	Lys	Glu	Pro	Asp	Ile	Leu	Pro	Ala	Lys
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Leu	Pro	Val	Leu	Leu	Leu	His	Gly	Val	Asp	Gly	Ile	Ala	Val	Gly	Met
145					150					155					160
Thr	Thr	Lys	Ile	Phe	Pro	His	Asn	Phe	Ala	Glu	Leu	Leu	Lys	Ala	Gln
				165					170					175	
Ile	Ala	Ile	Leu	Asn	Asp	Lys	Lys	Phe	Thr	Val	Phe	Pro	Asp	Phe	Pro
			180					185					190		
Ser	Gly	Gly	Leu	Met	Asp	Pro	Ser	Glu	Tyr	Gln	Asp	Gly	Leu	Gly	Ser
		195					200					205			
Ile	Thr	Leu	Arg	Ala	Ser	Ile	Asp	Ile	Ile	Asn	Asp	Lys	Thr	Leu	Val
	210					215					220				
Val	Lys	Gln	Ile	Cys	Pro	Gln	Ser	Thr	Thr	Glu	Thr	Leu	Ile	Arg	Ser
225					230					235					240
Ile	Glu	Asn	Ala	Ala	Lys	Arg	Gly	Thr	Ile	Lys	Ile	Asp	Thr	Ile	Gln
				245					250					255	
Asp	Phe	Ser	Thr	Asp	Val	Pro	His	Ile	Glu	Ile	Lys	Leu	Pro	Lys	Gly
			260					265					270		
Ser	Arg	Ala	Lys	Glu	Met	Leu	Pro	Leu	Leu	Phe	Glu	His	Thr	Glu	Cys
		275					280					285			
Gln	Val	Ile	Leu	Tyr	Ser	Lys	Pro	Thr	Val	Ile	Tyr	Glu	Asn	Lys	Pro
	290					295					300				
Val	Glu	Cys	Ser	Ile	Ser	Glu	Ile	Leu	Lys	Leu	His	Thr	Thr	Ala	Leu
305					310					315					320
Gln	Gly	Tyr	Leu	Glu	Lys	Glu	Leu	Leu	Leu	Leu	Gln	Glu	Gln	Leu	Thr
				325						330				335	
Leu	Asp	His	Tyr	His	Lys	Thr	Leu	Glu	Tyr	Ile	Phe	Ile	Lys	His	Lys
			340					345					350		
Leu	Tyr	Asp	Ser	Val	Arg	Glu	Val	Leu	Ala	Ile	Asn	Lys	Lys	Ile	Ser
		355					360					365			
Ala	Asp	Asp	Leu	His	Gln	Ala	Val	Leu	His	Ala	Leu	Glu	Pro	Trp	Leu
						375					380				
His	Glu	Leu	Ala	Thr	Pro	Val	Thr	Lys	Gln	Asp	Thr	Ser	Gln	Leu	Ala
385					390					395					400
Ser	Leu	Thr	Ile	Lys	Lys	Ile	Leu	Cys	Phe	Asn	Glu	Glu	Ala	Cys	Thr
				405					410					415	
Lys	Glu	Leu	Leu	Ala	Ile	Glu	Lys	Lys	Gln	Ala	Ala	Ile	Gln	Lys	Asp
			420					425					430		

Leu Gly Arg Ile Lys Glu Val Thr Val Lys Tyr Leu Lys Gly Leu Leu
435 440 445

Glu Arg His Gly His Leu Gly Glu Arg Lys Thr Gln Ile Thr Asn Phe
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Lys Thr Ala Lys Thr Ser Ile Leu Lys Gln Gln Thr Leu Ile
465 470 475

<210> 390

<211> 257

<212> PRT

<213> Chlamydia pneumoniae

<400> 390

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Gly Ala Gly Asn Arg Phe Leu Leu Gly Glu Thr Leu Pro Glu Val Glu
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Asp Val Arg Phe Leu Cys Gln Glu Thr Arg Val Asp Gly Phe Leu Tyr
35 40 45

Leu Lys Pro Ser Ser Cys Ala Asp Ala Gln Leu Ile Ile Phe Asn Ser
50 55 60

Asp Gly Ser Arg Pro Thr Met Cys Gly Asn Gly Leu Arg Cys Ala Ile
65 70 75 80

Ala His Leu Ala Ser Gln Lys Gly Lys Ser Asp Ile Ser Val Ser Thr
85 90 95

Asp Ser Gly Leu Tyr Ser Gly Tyr Phe Tyr Ser Trp Asp Arg Val Leu
100 105 110

Val Asp Met Thr Leu Ala Asp Trp Arg Ala Ser Val His Arg Leu Glu
115 120 125

Ser Arg Pro Asp Pro Leu Pro Lys Glu Val Val Cys Ile His Thr Gly
130 135 140

Val Pro His Ala Val Val Ile Leu Pro Glu Ile Ser Thr Leu Asp Leu
145 150 155 160

Ser Ile Leu Gly Pro Phe Leu Arg Tyr His Gln Thr Phe Ser Pro Asp
165 170 175

Gly Val Asn Val Asn Phe Val Gln Ile Leu Gly His Cys Gln Leu Arg
180 185 190

Val Arg Thr Tyr Glu Arg Gly Val Glu Gly Glu Thr Ala Ala Cys Gly
195 200 205

Thr Gly Ala Leu Ala Ser Ala Leu Val Val Ser Asn Ser Tyr Gly Trp
210 215 220

<400> 392

<210> 393

<211> 122

<212> PRT

<213> Chlamydia pneumoniae

<400> 393

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Ile Ser Leu Thr Tyr Ile Tyr Gly Ile Gly Ser Ala Arg Ser Asp Glu
20 25 30

Ile Ile Lys Lys Leu Lys Leu Asp Pro Glu Ala Arg Ala Ser Glu Leu
35 40 45

Thr Glu Glu Glu Val Gly Arg Leu Asn Ser Leu Leu Gln Ser Glu Tyr
50 55 60

Thr Val Glu Gly Asp Leu Arg Arg Arg Val Gln Ser Asp Ile Lys Arg
65 70 75 80

Leu Ile Ala Ile His Ser Tyr Arg Gly Gln Arg His Arg Leu Ser Leu
85 90 95

Pro Val Arg Gly Gln Arg Thr Lys Thr Asn Ser Arg Thr Arg Lys Gly
100 105 110

Lys Arg Lys Thr Val Ala Gly Lys Lys Lys
115 120

<210> 394

<211> 1723

<212> PRT

<213> Chlamydia pneumoniae

<400> 394

Met Lys Trp Leu Pro Ala Thr Ala Val Phe Ala Ala Val Leu Pro Ala
5 10 15

Leu Thr Ala Phe Gly Asp Pro Ala Ser Val Glu Ile Ser Thr Ser His
20 25 30

Thr Gly Ser Gly Asp Pro Thr Ser Asp Ala Ala Leu Thr Gly Phe Thr
35 40 45

Gln Ser Ser Thr Glu Thr Asp Gly Thr Thr Tyr Thr Ile Val Gly Asp
50 55 60

Ile Thr Phe Ser Thr Phe Thr Asn Ile Pro Val Pro Val Val Thr Pro
65 70 75 80

Asp Ala Asn Asp Ser Ser Ser Asn Ser Ser Lys Gly Gly Ser Ser Ser
85 90 95

Ser Gly Ala Thr Ser Leu Ile Arg Ser Ser Asn Leu His Ser Asp Phe
100 105 110

Asp Phe Thr Lys Asp Ser Val Leu Asp Leu Tyr His Leu Phe Phe Pro
115 120 125

Ser Ala Ser Asn Thr Leu Asn Pro Ala Leu Leu Ser Ser Ser Ser Ser
130 135 140

Gly Gly Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Gly Ser Ala Ser

145					150					155				160	
Ala	Val	Val	Ala	Ala	Asp	Pro	Lys	Gly	Gly	Ala	Ala	Phe	Tyr	Ser	Asn
				165					170					175	
Glu	Ala	Asn	Gly	Thr	Leu	Thr	Phe	Thr	Thr	Asp	Ser	Gly	Asn	Pro	Gly
			180					185					190		
Ser	Leu	Thr	Leu	Gln	Asn	Leu	Lys	Met	Thr	Gly	Asp	Gly	Ala	Ala	Ile
		195					200					205			
Tyr	Ser	Lys	Gly	Pro	Leu	Val	Phe	Thr	Gly	Leu	Lys	Asn	Leu	Thr	Phe
	210					215					220				
Thr	Gly	Asn	Glu	Ser	Gln	Lys	Ser	Gly	Gly	Ala	Ala	Tyr	Thr	Glu	Gly
225					230					235					240
Ala	Leu	Thr	Thr	Gln	Ala	Ile	Val	Glu	Ala	Val	Thr	Phe	Thr	Gly	Asn
				245					250					255	
Thr	Ser	Ala	Gly	Gln	Gly	Gly	Ala	Ile	Tyr	Val	Lys	Glu	Ala	Thr	Leu
			260					265					270		
Phe	Asn	Ala	Leu	Asp	Ser	Leu	Lys	Phe	Glu	Lys	Asn	Thr	Ser	Gly	Gln
		275					280					285			
Ala	Gly	Gly	Gly	Ile	Tyr	Thr	Glu	Ser	Thr	Leu	Thr	Ile	Ser	Asn	Ile
	290					295					300				
Thr	Lys	Ser	Ile	Glu	Phe	Ile	Ser	Asn	Lys	Ala	Ser	Val	Pro	Ala	Pro
305					310					315					320
Ala	Pro	Glu	Pro	Thr	Ser	Pro	Ala	Pro	Ser	Ser	Leu	Ile	Asn	Ser	Thr
				325					330					335	
Thr	Ile	Asp	Thr	Ser	Thr	Leu	Gln	Thr	Arg	Ala	Ala	Ser	Ala	Thr	Pro
			340					345					350		
Ala	Val	Ala	Pro	Val	Ala	Ala	Val	Thr	Pro	Thr	Pro	Ile	Ser	Thr	Gln
		355					360					365			
Glu	Thr	Ala	Gly	Asn	Gly	Gly	Ala	Ile	Tyr	Ala	Lys	Gln	Gly	Ile	Ser
	370					375					380				
Ile	Ser	Thr	Phe	Lys	Asp	Leu	Thr	Phe	Lys	Ser	Asn	Ser	Ala	Ser	Val
385					390					395					400
Asp	Ala	Thr	Leu	Thr	Val	Asp	Ser	Ser	Thr	Ile	Gly	Glu	Ser	Gly	Gly
				405					410					415	
Ala	Ile	Phe	Ala	Ala	Asp	Ser	Ile	Gln	Ile	Gln	Gln	Cys	Thr	Gly	Thr
			420					425					430		
Thr	Leu	Phe	Ser	Gly	Asn	Thr	Ala	Asn	Lys	Ser	Gly	Gly	Gly	Ile	Tyr
		435					440					445			
Ala	Val	Gly	Gln	Val	Thr	Leu	Glu	Asp	Ile	Ala	Asn	Leu	Lys	Met	Thr

450 455 460
 Asn Asn Thr Cys Lys Gly Glu Gly Gly Ala Ile Tyr Thr Lys Lys Ala
 465 470 475 480
 Leu Thr Ile Asn Asn Gly Ala Ile Leu Thr Thr Phe Ser Gly Asn Thr
 485 490 495
 Ser Thr Asp Asn Gly Gly Ala Ile Phe Ala Val Gly Gly Ile Thr Leu
 500 505 510
 Ser Asp Leu Val Glu Val Arg Phe Ser Lys Asn Lys Thr Gly Asn Tyr
 515 520 525
 Ser Ala Pro Ile Thr Lys Ala Ala Ser Asn Thr Ala Pro Val Val Ser
 530 535 540
 Ser Ser Thr Thr Ala Ala Ser Pro Ala Val Pro Ala Ala Ala Ala Ala
 545 550 555 560
 Pro Val Thr Asn Ala Ala Lys Gly Gly Ala Leu Tyr Ser Thr Glu Gly
 565 570 575
 Leu Thr Val Ser Gly Ile Thr Ser Ile Leu Ser Phe Glu Asn Asn Glu
 580 585 590
 Cys Gln Asn Gln Gly Gly Gly Ala Tyr Val Thr Lys Thr Phe Gln Cys
 595 600 605
 Ser Asp Ser His Arg Leu Gln Phe Thr Ser Asn Lys Ala Ala Asp Glu
 610 615 620
 Gly Gly Gly Leu Tyr Cys Gly Asp Asp Val Thr Leu Thr Asn Leu Thr
 625 630 635 640
 Gly Lys Thr Leu Phe Gln Glu Asn Ser Ser Glu Lys His Gly Gly Gly
 645 650 655
 Leu Ser Leu Ala Ser Gly Lys Ser Leu Thr Met Thr Ser Leu Glu Ser
 660 665 670
 Phe Cys Leu Asn Ala Asn Thr Ala Lys Glu Asn Gly Gly Gly Ala Asn
 675 680 685
 Val Pro Glu Asn Ile Val Leu Thr Phe Thr Tyr Thr Pro Thr Pro Asn
 690 695 700
 Glu Pro Ala Pro Val Gln Gln Pro Val Tyr Gly Glu Ala Leu Val Thr
 705 710 715 720
 Gly Asn Thr Ala Thr Lys Ser Gly Gly Gly Ile Tyr Thr Lys Asn Ala
 725 730 735
 Ala Phe Ser Asn Leu Ser Ser Val Thr Phe Asp Gln Asn Thr Ser Ser
 740 745 750
 Glu Asn Gly Gly Ala Leu Leu Thr Gln Lys Ala Ala Asp Lys Thr Asp

	755					760					765				
Cys	Ser	Phe	Thr	Tyr	Ile	Thr	Asn	Val	Asn	Ile	Thr	Asn	Asn	Thr	Ala
	770					775					780				
Thr	Gly	Asn	Gly	Gly	Gly	Ile	Ala	Gly	Gly	Lys	Ala	His	Phe	Asp	Arg
785					790					795					800
Ile	Asp	Asn	Leu	Thr	Val	Gln	Ser	Asn	Gln	Ala	Lys	Lys	Gly	Gly	Gly
				805					810					815	
Val	Tyr	Leu	Glu	Asp	Ala	Leu	Ile	Leu	Glu	Lys	Val	Ile	Thr	Gly	Ser
			820					825					830		
Val	Ser	Gln	Asn	Thr	Ala	Thr	Glu	Ser	Gly	Gly	Gly	Ile	Tyr	Ala	Lys
		835					840					845			
Asp	Ile	Gln	Leu	Gln	Ala	Leu	Pro	Gly	Ser	Phe	Thr	Ile	Thr	Asp	Asn
	850					855					860				
Lys	Val	Glu	Thr	Ser	Leu	Thr	Thr	Ser	Thr	Asn	Leu	Tyr	Gly	Gly	Gly
865					870					875					880
Ile	Tyr	Ser	Ser	Gly	Ala	Val	Thr	Leu	Thr	Asn	Ile	Ser	Gly	Thr	Phe
				885					890					895	
Gly	Ile	Thr	Gly	Asn	Ser	Val	Ile	Asn	Thr	Ala	Thr	Ser	Gln	Asp	Ala
			900					905					910		
Asp	Ile	Gln	Gly	Gly	Gly	Ile	Tyr	Ala	Thr	Thr	Ser	Leu	Ser	Ile	Asn
		915					920					925			
Gln	Cys	Asn	Thr	Pro	Ile	Leu	Phe	Ser	Asn	Asn	Ser	Ala	Ala	Thr	Lys
	930					935					940				
Lys	Thr	Ser	Thr	Thr	Lys	Gln	Ile	Ala	Gly	Gly	Ala	Ile	Phe	Ser	Ala
945					950					955					960
Ala	Val	Thr	Ile	Glu	Asn	Asn	Ser	Gln	Pro	Ile	Ile	Phe	Leu	Asn	Asn
				965					970					975	
Ser	Ala	Lys	Ser	Glu	Ala	Thr	Thr	Ala	Ala	Thr	Ala	Gly	Asn	Lys	Asp
			980					985					990		
Ser	Cys	Gly	Gly	Ala	Ile	Ala	Ala	Asn	Ser	Val	Thr	Leu	Thr	Asn	Asn
		995					1000					1005			
Pro	Glu	Ile	Thr	Phe	Lys	Gly	Asn	Tyr	Ala	Glu	Thr	Gly	Gly	Ala	Ile
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Ala	Asp	Asn	Gly	Ser	Val	Leu	Phe	Gln	Asp	Asn	Ser	Ala	Leu	Asn	Arg
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Gly	Gly	Ala	Ile	Tyr	Gly	Glu	Thr	Ile	Asp	Ile	Ser	Arg	Thr	Gly	Ala

1060 1065 1070
 Thr Phe Ile Gly Asn Ser Ser Lys His Asp Gly Ser Ala Ile Cys Cys
 1075 1080 1085
 Ser Thr Ala Leu Thr Leu Ala Pro Asn Ser Gln Leu Ile Phe Glu Asn
 1090 1095 1100
 Asn Lys Val Thr Glu Thr Thr Ala Thr Thr Lys Ala Ser Ile Asn Asn
 1105 1110 1115 1120
 Leu Gly Ala Ala Ile Tyr Gly Asn Asn Glu Thr Ser Asp Val Thr Ile
 1125 1130 1135
 Ser Leu Ser Ala Glu Asn Gly Ser Ile Phe Phe Lys Asn Asn Leu Cys
 1140 1145 1150
 Thr Ala Thr Asn Lys Tyr Cys Ser Ile Ala Gly Asn Val Lys Phe Thr
 1155 1160 1165
 Ala Ile Glu Ala Ser Ala Gly Lys Ala Ile Ser Phe Tyr Asp Ala Val
 1170 1175 1180
 Asn Val Ser Thr Lys Glu Thr Asn Ala Gln Glu Leu Lys Leu Asn Glu
 1185 1190 1195 1200
 Lys Ala Thr Ser Thr Gly Thr Ile Leu Phe Ser Gly Glu Leu His Glu
 1205 1210 1215
 Asn Lys Ser Tyr Ile Pro Gln Lys Val Thr Phe Ala His Gly Asn Leu
 1220 1225 1230
 Ile Leu Gly Lys Asn Ala Glu Leu Ser Val Val Ser Phe Thr Gln Ser
 1235 1240 1245
 Pro Gly Thr Thr Ile Thr Met Gly Pro Gly Ser Val Leu Ser Asn His
 1250 1255 1260
 Ser Lys Glu Ala Gly Gly Ile Ala Ile Asn Asn Val Ile Ile Asp Phe
 1265 1270 1275 1280
 Ser Glu Ile Val Pro Thr Lys Asp Asn Ala Thr Val Ala Pro Pro Thr
 1285 1290 1295
 Leu Lys Leu Val Ser Arg Thr Asn Ala Asp Ser Lys Asp Lys Ile Asp
 1300 1305 1310
 Ile Thr Gly Thr Val Thr Leu Leu Asp Pro Asn Gly Asn Leu Tyr Gln
 1315 1320 1325
 Asn Ser Tyr Leu Gly Glu Asp Arg Asp Ile Thr Leu Phe Asn Ile Asp
 1330 1335 1340
 Asn Ser Ala Ser Gly Ala Val Thr Ala Thr Asn Val Thr Leu Gln Gly
 1345 1350 1355 1360
 Asn Leu Gly Ala Lys Lys Gly Tyr Leu Gly Thr Trp Asn Leu Asp Pro

[illegible]

1665 1670 1675 1680

Ala Ala Arg Ala Glu Val Ser Ser Gln Ile Tyr Leu Gly Ser Tyr Trp
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Thr Leu Tyr Gly Thr Tyr Thr Ile Asp Ala Ser Met Asn Thr Leu Val
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Gln Met Ala Asn Gly Gly Ile Arg Phe Val Phe
 1715 1720

<210> 395
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 <212> PRT
 <213> Chlamydia pneumoniae

<400> 395

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Leu Thr Ala Phe Gly Asp Pro Ala Ser Val Glu Ile Ser Thr Ser His
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Thr Gly Ser Gly Asp Pro Thr Ser Asp Ala Ala Leu Thr Gly Phe Thr
 35 40 45

Gln Ser Ser Thr Glu Thr Asp Gly Thr Thr Tyr Thr Ile Val Gly Asp
 50 55 60

Ile Thr Phe Ser Thr Phe Thr Asn Ile Pro Val Pro Val Val Thr Pro
 65 70 75 80

Asp Ala Asn Asp Ser Ser Ser Asn Ser Ser Lys Gly Gly Ser Ser Ser
 85 90 95

Ser Gly Ala Thr Ser Leu Ile Arg Ser Ser Asn Leu His Ser Asp Phe
 100 105 110

Asp Phe Thr Lys Asp Ser Val Leu Asp Leu Tyr His Leu Phe Phe Pro
 115 120 125

Ser Ala Ser Asn Thr Leu Asn Pro Ala Leu Leu Ser Ser Ser Ser Ser
 130 135 140

Gly Gly Ser Ser Ser Ser Ser Ser Ser Ser Ser Gly Ser Ala Ser
 145 150 155 160

Ala Val Val Ala Ala Asp Pro Lys Gly Gly Ala Ala Phe Tyr Ser Asn
 165 170 175

Glu Ala Asn Gly Thr Leu Thr Phe Thr Thr Asp Ser Gly Asn Pro Gly
 180 185 190

Ser Leu Thr Leu Gln Asn Leu Lys Met Thr Gly Asp Gly Ala Ala Ile
 195 200 205

Tyr Ser Lys Gly Pro Leu Val Phe Thr Gly Leu Lys Asn Leu Thr Phe
 210 215 220

Thr Gly Asn Glu Ser Gln Lys Ser Gly Gly Ala Ala Tyr Thr Glu Gly
 225 230 235 240

Ala Leu Thr Thr Gln Ala Ile Val Glu Ala Val Thr Phe Thr Gly Asn
 245 250 255

Thr Ser Ala Gly Gln Gly Gly Ala Ile Tyr Val Lys Glu Ala Thr Leu
 260 265 270

Phe Asn Ala Leu Asp Ser Leu Lys Phe Glu Lys Asn Thr Ser Gly Gln
 275 280 285

Ala Gly Gly Gly Ile Tyr Thr Glu Ser Thr Leu Thr Ile Ser Asn Ile
 290 295 300

Thr Lys Ser Ile Glu Phe Ile Ser Asn Lys Ala Ser Val Pro Ala Pro

305 310 315 320
 Ala Pro Glu Pro Thr Ser Pro Ala Pro Ser Ser Leu Ile Asn Ser Thr
 Thr Ile Asp Thr Ser Thr Leu Gln Thr Arg Ala Ala Ser Ala Thr Pro
 Ala Val Ala Pro Val Ala Ala Val Thr Pro Thr Pro Ile Ser Thr Gln
 Glu Thr Ala Gly Asn Gly Gly Ala Ile Tyr Ala Lys Gln Gly Ile Ser
 Ile Ser Thr Phe Lys Asp Leu Thr Phe Lys Ser Asn Ser Ala Ser Val
 Asp Ala Thr Leu Thr Val Asp Ser Ser Thr Ile Gly Glu Ser Gly Gly
 Ala Ile Phe Ala Ala Asp Ser Ile Gln Ile Gln Gln Cys Thr Gly Thr
 Thr Leu Phe Ser Gly Asn Thr Ala Asn Lys Ser Gly Gly Gly Ile Tyr
 Ala Val Gly Gln Val Thr Leu Glu Asp Ile Ala Asn Leu Lys Met Thr
 Asn Asn Thr Cys Lys Gly Glu Gly Gly Ala Ile Tyr Thr Lys Lys Ala
 Leu Thr Ile Asn Asn Gly Ala Ile Leu Thr Thr Phe Ser Gly Asn Thr
 Ser Thr Asp Asn Gly Gly Ala Ile Phe Ala Val Gly Gly Ile Thr Leu
 Ser Asp Leu Val Glu Val Arg Phe Ser Lys Asn Lys Thr Gly Asn Tyr
 Ser Ala Pro Ile Thr Lys Ala Ala Ser Asn Thr Ala Pro Val Val Ser
 Ser Ser Thr Thr Ala Ala Ser Pro Ala Val Pro Ala Ala Ala Ala
 Pro Val Thr Asn Ala Ala Lys Gly Gly Ala Leu Tyr Ser Thr Glu Gly
 Leu Thr Val Ser Gly Ile Thr Ser Ile Leu Ser Phe Glu Asn Asn Glu
 Cys Gln Asn Gln Gly Gly Gly Ala Tyr Val Thr Lys Thr Phe Gln Cys
 Ser Asp Ser His Arg Leu Gln Phe Thr Ser Asn Lys Ala Ala Asp Glu
 Gly Gly Gly Leu Tyr Cys Gly Asp Asp Val Thr Leu Thr Asn Leu Thr
 Gly Lys Thr Leu Phe Gln Glu Asn Ser Ser Glu Lys His Gly Gly Gly
 Leu Ser Leu Ala Ser Gly Lys Ser Leu Thr Met Thr Ser Leu Glu Ser
 Phe Cys Leu Asn Ala Asn Thr Ala Lys Glu Asn Gly Gly Gly Ala Asn
 Val Pro Glu Asn Ile Val Leu Thr Phe Thr Tyr Thr Pro Thr Pro Asn
 Glu Pro Ala Pro Val Gln Gln Pro Val Tyr Gly Glu Ala Leu Val Thr
 Gly Asn Thr Ala Thr Lys Ser Gly Gly Gly Ile Tyr Thr Lys Asn Ala
 Ala Phe Ser Asn Leu Ser Ser Val Thr Phe Asp Gln Asn Thr Ser Ser
 Glu Asn Gly Gly Ala Leu Leu Thr Gln Lys Ala Ala Asp Lys Thr Asp

Cys Ser Phe Thr Tyr Ile Thr Asn Val Asn Ile Thr Asn Asn Thr Ala
 770 775 780
 Thr Gly Asn Gly Gly Gly Ile Ala Gly Gly Lys Ala His Phe Asp Arg
 785 790 795 800
 Ile Asp Asn Leu Thr Val Gln Ser Asn Gln Ala Lys Lys Gly Gly Gly
 805 810 815
 Val Tyr Leu Glu Asp Ala Leu Ile Leu Glu Lys Val Ile Thr Gly Ser
 820 825 830
 Val Ser Gln Asn Thr Ala Thr Glu Ser Gly Gly Gly Ile Tyr Ala Lys
 835 840 845
 Asp Ile Gln Leu Gln Ala Leu Pro Gly Ser Phe Thr Ile Thr Asp Asn
 850 855 860
 Lys Val Glu Thr Ser Leu Thr Thr Ser Thr Asn Leu Tyr Gly Gly Gly
 865 870 875 880
 Ile Tyr Ser Ser Gly Ala Val Thr Leu Thr Asn Ile Ser Gly Thr Phe
 885 890 895
 Gly Ile Thr Gly Asn Ser Val Ile Asn Thr Ala Thr Ser Gln Asp Ala
 900 905 910
 Asp Ile Gln Gly Gly Gly Ile Tyr Ala Thr Thr Ser Leu Ser Ile Asn
 915 920 925
 Gln Cys Asn Thr Pro Ile Leu Phe Ser Asn Asn Ser Ala Ala Thr Lys
 930 935 940
 Lys Thr Ser Thr Thr Lys Gln Ile Ala Gly Gly Ala Ile Phe Ser Ala
 945 950 955 960
 Ala Val Thr Ile Glu Asn Asn Ser Gln Pro Ile Ile Phe Leu Asn Asn
 965 970 975
 Ser Ala Lys Ser Glu Ala Thr Thr Ala Ala Thr Ala Gly Asn Lys Asp
 980 985 990
 Ser Cys Gly Gly Ala Ile Ala Ala Asn Ser Val Thr Leu Thr Asn Asn
 995 1000 1005
 Pro Glu Ile Thr Phe Lys Gly Asn Tyr Ala Glu Thr Gly Gly Ala Ile
 1010 1015 1020
 Gly Cys Ile Asp Leu Thr Asn Gly Ser Pro Pro Arg Lys Val Ser Ile
 1025 1030 1035 1040
 Ala Asp Asn Gly Ser Val Leu Phe Gln Asp Asn Ser Ala Leu Asn Arg
 1045 1050 1055
 Gly Gly Ala Ile Tyr Gly Glu Thr Ile Asp Ile Ser Arg Thr Gly Ala
 1060 1065 1070
 Thr Phe Ile Gly Asn Ser Ser Lys His Asp Gly Ser Ala Ile Cys Cys
 1075 1080 1085
 Ser Thr Ala Leu Thr Leu Ala Pro Asn Ser Gln Leu Ile Phe Glu Asn
 1090 1095 1100
 Asn Lys Val Thr Glu Thr Thr Ala Thr Thr Lys Ala Ser Ile Asn Asn
 1105 1110 1115 1120
 Leu Gly Ala Ala Ile Tyr Gly Asn Asn Glu Thr Ser Asp Ile Thr Ile
 1125 1130 1135
 Ser Leu Ser Ala Glu Asn Gly Ser Ile Phe Phe Lys Asn Asn Leu Cys
 1140 1145 1150
 Thr Ala Thr Asn Lys Tyr Cys Ser Ile Ala Gly Asn Val Lys Phe Thr
 1155 1160 1165
 Ala Ile Glu Ala Ser Ala Gly Lys Ala Ile Ser Phe Tyr Asp Ala Val
 1170 1175 1180
 Asn Val Ser Thr Lys Glu Thr Asn Ala Gln Glu Leu Lys Leu Asn Glu
 1185 1190 1195 1200
 Lys Ala Thr Ser Thr Gly Thr Ile Leu Phe Ser Gly Glu Leu His Glu
 1205 1210 1215
 Asn Lys Ser Tyr Ile Pro Gln Lys Val Thr Phe Ala His Gly Asn Leu

[illegible]


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<210> 396
<211> 1252
<212> PRT
<213> Chlamydia pneumoniae
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			20					25					30			
Phe	Leu	Gln	Ile	Gly	Lys	Leu	Ala	Glu	Glu	Arg	Glu	Asn	Ile	Gly	Leu	
		35					40					45				
Glu	Glu	Val	Phe	Arg	Glu	Ile	Phe	Pro	Ile	Lys	Ser	Tyr	Asn	Glu	Ala	
	50					55					60					
Thr	Val	Leu	Glu	Tyr	Leu	Ser	Tyr	Asn	Leu	Gly	Val	Pro	Lys	Tyr	Ser	
65					70					75					80	
Pro	Glu	Glu	Cys	Ile	Arg	Arg	Gly	Ile	Thr	Tyr	Ser	Val	Thr	Leu	Lys	
				85					90					95		
Val	Arg	Phe	Arg	Leu	Thr	Asp	Glu	Thr	Gly	Ile	Lys	Glu	Glu	Glu	Val	
			100					105					110			
Tyr	Met	Gly	Thr	Ile	Pro	Leu	Met	Thr	Asp	Lys	Gly	Thr	Phe	Ile	Ile	
		115					120					125				
Asn	Gly	Ala	Glu	Arg	Val	Val	Val	Ser	Gln	Val	His	Arg	Ser	Pro	Gly	
	130					135					140					
Ile	Asn	Phe	Glu	Gln	Glu	Lys	His	Ser	Lys	Gly	Asn	Ile	Leu	Phe	Ser	
145					150					155					160	
Phe	Arg	Ile	Ile	Pro	Tyr	Arg	Gly	Ser	Trp	Leu	Glu	Ala	Ile	Phe	Asp	
				165					170					175		
Ile	Asn	Asp	Leu	Ile	Tyr	Ile	His	Ile	Asp	Arg	Lys	Lys	Arg	Arg	Arg	
			180					185					190			
Lys	Ile	Leu	Ala	Ile	Thr	Phe	Ile	Arg	Ala	Leu	Gly	Tyr	Ser	Ser	Asp	
		195					200					205				
Ala	Asp	Ile	Ile	Glu	Glu	Phe	Phe	Thr	Ile	Gly	Glu	Ser	Ser	Leu	Arg	
	210					215					220					
Ser	Glu	Lys	Asp	Phe	Ala	Leu	Leu	Val	Gly	Arg	Ile	Leu	Ala	Asp	Asn	

225						230						235						240
Ile	Ile	Asp	Glu	Ala	Ser	Ser	Leu	Val	Tyr	Gly	Lys	Ala	Gly	Glu	Lys			
				245					250					255				
Leu	Ser	Thr	Ala	Met	Leu	Lys	Arg	Met	Leu	Asp	Ala	Gly	Ile	Ala	Ser			
			260					265					270					
Val	Lys	Ile	Ala	Val	Asp	Ala	Asp	Glu	Asn	His	Pro	Ile	Ile	Lys	Met			
		275					280					285						
Leu	Ala	Lys	Asp	Pro	Thr	Asp	Ser	Tyr	Glu	Ala	Ala	Leu	Lys	Asp	Phe			
	290					295					300							
Tyr	Arg	Arg	Leu	Arg	Pro	Gly	Glu	Pro	Ala	Thr	Leu	Ala	Asn	Ala	Arg			
305					310					315					320			
Ser	Thr	Ile	Met	Arg	Leu	Phe	Phe	Asp	Pro	Lys	Arg	Tyr	Asn	Leu	Gly			
				325					330					335				
Arg	Val	Gly	Arg	Tyr	Lys	Leu	Asn	Arg	Lys	Leu	Gly	Phe	Ser	Ile	Asp			
			340					345					350					
Asp	Glu	Ala	Leu	Ser	Gln	Val	Thr	Leu	Arg	Lys	Glu	Asp	Val	Ile	Gly			
		355					360					365						
Ala	Leu	Lys	Tyr	Leu	Ile	Arg	Leu	Lys	Met	Gly	Asp	Glu	Lys	Ala	Cys			
	370					375					380							
Val	Asp	Asp	Ile	Asp	His	Leu	Ala	Asn	Arg	Arg	Val	Arg	Ser	Val	Gly			
385					390					395					400			
Glu	Leu	Ile	Gln	Asn	Gln	Cys	Arg	Ser	Gly	Leu	Ala	Arg	Met	Glu	Lys			
				405					410					415				
Ile	Val	Arg	Glu	Arg	Met	Asn	Leu	Phe	Asp	Phe	Ser	Ser	Asp	Thr	Leu			
			420					425					430					
Thr	Pro	Gly	Lys	Val	Val	Ser	Ala	Lys	Gly	Leu	Ala	Ser	Val	Leu	Lys			
		435					440					445						
Asp	Phe	Phe	Gly	Arg	Ser	Gln	Leu	Ser	Gln	Phe	Met	Asp	Gln	Thr	Asn			
	450					455					460							
Pro	Val	Ala	Glu	Leu	Thr	His	Lys	Arg	Arg	Leu	Ser	Ala	Leu	Gly	Pro			
465					470					475					480			
Gly	Gly	Leu	Asn	Arg	Glu	Arg	Ala	Gly	Phe	Glu	Val	Arg	Asp	Val	His			
				485					490					495				
Ala	Ser	His	Tyr	Gly	Arg	Ile	Cys	Pro	Ile	Glu	Thr	Pro	Glu	Gly	Pro			
			500					505					510					
Asn	Ile	Gly	Leu	Ile	Thr	Ser	Leu	Ser	Ser	Phe	Ala	Lys	Ile	Asn	Glu			
		515					520					525						
Phe	Gly	Phe	Ile	Glu	Thr	Pro	Tyr	Arg	Ile	Val	Arg	Asp	Gly	Ile	Val			

530					535					540					
Thr 545	Asp	Glu	Ile	Glu	Tyr 550	Met	Thr	Ala	Asp	Val 555	Glu	Glu	Glu	Cys	Val 560
Ile	Ala	Gln	Ala	Ser 565	Ala	Ser	Leu	Asp	Glu 570	Tyr	Asn	Met	Phe	Thr 575	Glu
Pro	Val	Cys	Trp 580	Val	Arg	Tyr	Ala	Gly 585	Glu	Ala	Phe	Glu	Ala	Asp	Thr
Ser	Thr	Val 595	Thr	His	Met	Asp	Val 600	Ser	Pro	Lys	Gln	Leu 605	Val	Ser	Ile
Val	Thr 610	Gly	Leu	Ile	Pro	Phe 615	Leu	Glu	His	Asp	Asp 620	Ala	Asn	Arg	Ala
Leu 625	Met	Gly	Ser	Asn	Met 630	Gln	Arg	Gln	Ala	Val 635	Pro	Leu	Leu	Lys	Thr 640
Glu	Ala	Pro	Val 645	Val	Gly	Thr	Gly	Leu	Glu 650	Cys	Arg	Ala	Ala	Lys 655	Asp
Ser	Gly	Ala	Ile 660	Val	Val	Ala	Glu	Glu 665	Asp	Gly	Val	Val	Asp 670	Phe	Val
Asp	Gly	Tyr 675	Lys	Val	Val	Val	Ala 680	Ala	Lys	His	Asn	Pro 685	Thr	Ile	Lys
Arg	Thr 690	Tyr	His	Leu	Lys	Lys 695	Phe	Leu	Arg	Ser	Asn 700	Ser	Gly	Thr	Cys
Ile 705	Asn	Gln	Gln	Pro	Leu 710	Cys	Ala	Val	Gly	Asp 715	Val	Ile	Thr	Lys	Gly 720
Asp	Val	Ile	Ala 725	Asp	Gly	Pro	Ala	Thr	Asp 730	Arg	Gly	Glu	Leu	Ala 735	Leu
Gly	Lys	Asn	Val 740	Leu	Val	Ala	Phe	Met 745	Pro	Trp	Tyr	Gly	Tyr 750	Asn	Phe
Glu	Asp 755	Ala	Ile	Ile	Ile	Ser	Glu 760	Lys	Leu	Ile	Arg	Glu 765	Asp	Ala	Tyr
Thr	Ser 770	Ile	Tyr	Ile	Glu	Glu 775	Phe	Glu	Leu	Thr	Ala 780	Arg	Asp	Thr	Lys
Leu 785	Gly	Lys	Glu	Glu	Ile 790	Thr	Arg	Asp	Ile	Pro 795	Asn	Val	Ser	Asp	Glu 800
Val	Leu	Ala	Asn 805	Leu	Gly	Glu	Asp	Gly	Ile 810	Ile	Arg	Ile	Gly	Ala 815	Glu
Val	Lys	Pro	Gly 820	Asp	Ile	Leu	Val	Gly 825	Lys	Ile	Thr	Pro	Lys 830	Ser	Glu
Thr	Glu	Leu	Ala	Pro	Glu	Glu	Arg	Leu	Leu	Arg	Ala	Ile	Phe	Gly	Glu

835					840					845					
Lys	Ala	Ala	Asp	Val	Lys	Asp	Ala	Ser	Leu	Thr	Val	Pro	Pro	Gly	Thr
	850					855					860				
Glu	Gly	Val	Val	Met	Asp	Val	Lys	Val	Phe	Ser	Arg	Lys	Asp	Arg	Leu
865					870					875					880
Ser	Lys	Ser	Asp	Asp	Glu	Leu	Val	Glu	Glu	Ala	Val	His	Leu	Lys	Asp
				885					890					895	
Leu	Gln	Lys	Gly	Tyr	Lys	Asn	Gln	Val	Ala	Thr	Leu	Lys	Thr	Glu	Tyr
			900					905					910		
Arg	Glu	Lys	Leu	Gly	Ala	Leu	Leu	Leu	Asn	Glu	Lys	Ala	Pro	Ala	Ala
		915					920					925			
Ile	Ile	His	Arg	Arg	Thr	Ala	Glu	Ile	Val	Val	His	Glu	Gly	Leu	Leu
	930					935					940				
Phe	Asp	Gln	Glu	Thr	Ile	Glu	Arg	Ile	Glu	Gln	Glu	Asp	Leu	Val	Asp
945					950					955					960
Leu	Leu	Met	Pro	Asn	Cys	Glu	Met	Tyr	Glu	Val	Leu	Lys	Gly	Leu	Leu
				965					970					975	
Ser	Asp	Tyr	Glu	Thr	Ala	Leu	Gln	Arg	Leu	Glu	Ile	Asn	Tyr	Lys	Thr
			980					985					990		
Glu	Val	Glu	His	Ile	Arg	Glu	Gly	Asp	Ala	Asp	Leu	Asp	His	Gly	Val
		995					1000					1005			
Ile	Arg	Gln	Val	Lys	Val	Tyr	Val	Ala	Ser	Lys	Arg	Lys	Leu	Gln	Val
	1010					1015					1020				
Gly	Asp	Lys	Met	Ala	Gly	Arg	His	Gly	Asn	Lys	Gly	Val	Val	Ser	Lys
1025					1030					1035					1040
Ile	Val	Pro	Glu	Ala	Asp	Met	Pro	Tyr	Leu	Ser	Asn	Gly	Glu	Thr	Val
				1045					1050					1055	
Gln	Met	Ile	Leu	Asn	Pro	Leu	Gly	Val	Pro	Ser	Arg	Met	Asn	Leu	Gly
			1060					1065					1070		
Gln	Val	Leu	Glu	Thr	His	Leu	Gly	Tyr	Ala	Ala	Lys	Thr	Ala	Gly	Ile
		1075					1080					1085			
Tyr	Val	Lys	Thr	Pro	Val	Phe	Glu	Gly	Phe	Pro	Glu	Gln	Arg	Ile	Trp
	1090					1095					1100				
Asp	Met	Met	Ile	Glu	Gln	Gly	Leu	Pro	Glu	Asp	Gly	Lys	Ser	Phe	Leu
1105					1110					1115					1120
Tyr	Asp	Gly	Lys	Thr	Gly	Glu	Arg	Phe	Asp	Asn	Lys	Val	Val	Ile	Gly
				1125					1130					1135	
Tyr	Ile	Tyr	Met	Leu	Lys	Leu	Ser	His	Leu	Ile	Ala	Asp	Lys	Ile	His

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<211> 224
<212> PRT
<213> Chlamydia pneumoniae
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Met	Leu	Lys	His	Glu	Phe	Tyr	Gln	Arg	Trp	Ser	Glu	Gly	Lys	Leu	Glu	
			20					25					30			
Lys	Gln	Gln	Leu	Gln	Ala	Tyr	Ala	Lys	Asp	Tyr	Tyr	Leu	His	Ile	Lys	
		35					40					45				
Ala	Phe	Pro	Cys	Tyr	Leu	Ser	Ala	Leu	His	Ala	Arg	Cys	Asp	Asp	Leu	
	50					55					60					
Gln	Ile	Arg	Arg	Gln	Ile	Leu	Glu	Asn	Leu	Met	Asp	Glu	Glu	Ala	Gly	
65					70					75					80	
Asn	Pro	Asn	His	Ile	Asp	Leu	Trp	Arg	Gln	Phe	Ala	Leu	Ser	Leu	Gly	
				85					90					95		
Val	Ser	Glu	Glu	Glu	Leu	Ala	Asn	His	Glu	Phe	Ser	Gln	Ala	Ala	Gln	
			100					105					110			
Asp	Met	Val	Ala	Thr	Phe	Arg	Arg	Leu	Cys	Asp	Met	Pro	Gln	Leu	Ala	
		115					120					125				
Val	Gly	Leu	Gly	Ala	Leu	Tyr	Thr	Tyr	Glu	Ile	Gln	Ile	Pro	Gln	Val	
	130					135					140					

Lys Glu Gly Cys Cys Phe Thr Ala Ala Thr Val Cys Ala Cys Pro Glu
 195 200 205
 Leu Arg Ser Tyr Thr Lys Cys Gly Gln Pro Ala Ile Cys Ile Lys Gln
 210 215 220
 Glu Gly Pro Asp Cys Ala Cys Leu Arg Cys Pro Val Cys Tyr Lys Ile
 225 230 235 240
 Glu Val Val Asn Thr Gly Ser Ala Ile Ala Arg Asn Val Thr Val Asp
 245 250 255
 Asn Pro Val Pro Asp Gly Tyr Ser His Ala Ser Gly Gln Arg Val Leu
 260 265 270
 Ser Phe Asn Leu Gly Asp Met Arg Pro Gly Asp Lys Lys Val Phe Thr
 275 280 285
 Val Glu Phe Cys Pro Gln Arg Arg Gly Gln Ile Thr Asn Val Ala Thr
 290 295 300
 Val Thr Tyr Cys Gly Gly His Lys Cys Ser Ala Asn Val Thr Thr Val
 305 310 315 320
 Val Asn Glu Pro Cys Val Gln Val Asn Ile Ser Gly Ala Asp Trp Ser
 325 330 335
 Tyr Val Cys Lys Pro Val Glu Tyr Ser Ile Ser Val Ser Asn Pro Gly
 340 345 350
 Asp Leu Val Leu His Asp Val Val Ile Gln Asp Thr Leu Pro Ser Gly
 355 360 365
 Val Thr Val Leu Glu Ala Pro Gly Gly Glu Ile Cys Cys Asn Lys Val
 370 375 380
 Val Trp Arg Ile Lys Glu Met Cys Pro Gly Glu Thr Leu Gln Phe Lys
 385 390 395 400
 Leu Val Val Lys Ala Gln Val Pro Gly Arg Phe Thr Asn Gln Val Ala
 405 410 415
 Val Thr Ser Glu Ser Asn Cys Gly Thr Cys Thr Ser Cys Ala Glu Thr
 420 425 430
 Thr Thr His Trp Lys Gly Leu Ala Ala Thr His Met Cys Val Leu Asp
 435 440 445
 Thr Asn Asp Pro Ile Cys Val Gly Glu Asn Thr Val Tyr Arg Ile Cys
 450 455 460
 Val Thr Asn Arg Gly Ser Ala Glu Asp Thr Asn Val Ser Leu Ile Leu
 465 470 475 480
 Lys Phe Ser Lys Glu Leu Gln Pro Ile Ala Ser Ser Gly Pro Thr Lys
 485 490 495

Gly Thr Ile Ser Gly Asn Thr Val Val Phe Asp Ala Leu Pro Lys Leu
500 505 510

Gly Ser Lys Glu Ser Val Glu Phe Ser Val Thr Leu Lys Gly Ile Ala
515 520 525

Pro Gly Asp Ala Arg Gly Glu Ala Ile Leu Ser Ser Asp Thr Leu Thr
530 535 540

Ser Pro Val Ser Asp Thr Glu Asn Thr His Val Tyr
545 550 555

<210> 399

<211> 461

<212> PRT

<213> Chlamydia pneumoniae

<400> 399

Met Thr Gln Glu Phe Asp Cys Val Val Ile Gly Ala Gly Pro Ser Gly
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Tyr Val Ala Ala Ile Thr Ala Ala Gln Ser Lys Leu Arg Thr Ala Leu
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Ile Glu Glu Asp Gln Ala Gly Gly Thr Cys Leu Asn Arg Gly Cys Ile
35 40 45

Pro Ser Lys Ala Leu Ile Ala Gly Ala Asn Val Val Ser His Ile Lys
50 55 60

His Ala Glu Gln Phe Gly Ile His Val Asp Gly Tyr Thr Ile Asp Tyr
65 70 75 80

Pro Ala Met Ala Lys Arg Lys Asn Thr Val Val Gln Gly Ile Arg Gln
85 90 95

Gly Leu Glu Gly Leu Ile Arg Ser Asn Lys Ile Thr Val Leu Lys Gly
100 105 110

Thr Gly Ser Leu Val Ser Ser Thr Glu Val Lys Val Ile Gly Gln Asp
115 120 125

Thr Thr Ile Ile Lys Ala Asn His Ile Ile Leu Ala Thr Gly Ser Glu
130 135 140

Pro Arg Pro Phe Pro Gly Val Pro Phe Ser Ser Arg Ile Leu Ser Ser
145 150 155 160

Thr Gly Ile Leu Glu Leu Glu Val Leu Pro Lys Lys Leu Ala Ile Ile
165 170 175

Gly Gly Gly Val Ile Gly Cys Glu Phe Ala Ser Leu Phe His Thr Leu
180 185 190

Gly Val Glu Ile Thr Val Ile Glu Ala Leu Asp His Ile Leu Ala Val

195	200	205
Asn Asn Lys Glu Val Ser Gln Thr Val Thr Asn Lys Phe Thr Lys Gln		
210	215	220
Gly Ile Arg Ile Leu Thr Lys Ala Ser Ile Ser Ala Ile Glu Glu Ser		
225	230	235
Gln Asn Gln Val Arg Ile Thr Val Asn Asp Gln Val Glu Glu Phe Asp		
	245	250
Tyr Val Leu Val Ala Ile Gly Arg Gln Phe Asn Thr Ala Ser Ile Gly		
	260	265
Leu Asp Asn Ala Gly Val Ile Arg Asp Asp Arg Gly Val Ile Pro Val		
	275	280
Asp Glu Thr Met Arg Thr Asn Val Pro Asn Ile Tyr Ala Ile Gly Asp		
	290	295
Ile Thr Gly Lys Trp Leu Leu Ala His Val Ala Ser His Gln Gly Val		
305	310	315
Ile Ala Ala Lys Asn Ile Ser Gly His His Glu Val Met Asp Tyr Ser		
	325	330
Ala Ile Pro Ser Val Ile Phe Thr His Pro Glu Ile Ala Met Val Gly		
	340	345
Leu Ser Leu Gln Glu Ala Glu Gln Gln Asn Leu Pro Ala Lys Leu Thr		
	355	360
Lys Phe Pro Phe Lys Ala Ile Gly Lys Ala Val Ala Leu Gly Ala Ser		
	370	375
Asp Gly Phe Ala Ala Ile Val Ser His Glu Ile Thr Gln Gln Ile Leu		
385	390	395
Gly Ala Tyr Val Ile Gly Pro His Ala Ser Ser Leu Ile Gly Glu Met		
	405	410
Thr Leu Ala Ile Arg Asn Glu Leu Thr Leu Pro Cys Ile Tyr Glu Thr		
	420	425
Val His Ala His Pro Thr Leu Ser Glu Val Trp Ala Glu Gly Ala Leu		
	435	440
Leu Ala Thr Asn His Pro Leu His Phe Pro Pro Lys Ser		
	450	455
		460

<210> 400

<211> 544

<212> PRT

<213> Chlamydia pneumoniae

<400> 400

Met Ala Ala Lys Asn Ile Lys Tyr Asn Glu Glu Ala Arg Lys Lys Ile
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 His Lys Gly Val Lys Thr Leu Ala Glu Ala Val Lys Val Thr Leu Gly
 20 25 30
 Pro Lys Gly Arg His Val Val Ile Asp Lys Ser Phe Gly Ser Pro Gln
 35 40 45
 Val Thr Lys Asp Gly Val Thr Val Ala Lys Glu Ile Glu Leu Glu Asp
 50 55 60
 Lys His Glu Asn Met Gly Ala Gln Met Val Lys Glu Val Ala Ser Lys
 65 70 75 80
 Thr Ala Asp Lys Ala Gly Asp Gly Thr Thr Thr Ala Thr Val Leu Ala
 85 90 95
 Glu Ala Ile Tyr Ser Glu Gly Leu Arg Asn Val Thr Ala Gly Ala Asn
 100 105 110
 Pro Met Asp Leu Lys Arg Gly Ile Asp Lys Ala Val Lys Val Val Val
 115 120 125
 Asp Glu Leu Lys Lys Ile Ser Lys Pro Val Gln His His Lys Glu Ile
 130 135 140
 Ala Gln Val Ala Thr Ile Ser Ala Asn Asn Asp Ser Glu Ile Gly Asn
 145 150 155 160
 Leu Ile Ala Glu Ala Met Glu Lys Val Gly Lys Asn Gly Ser Ile Thr
 165 170 175
 Val Glu Glu Ala Lys Gly Phe Glu Thr Val Leu Asp Val Val Glu Gly
 180 185 190
 Met Asn Phe Asn Arg Gly Tyr Leu Ser Ser Tyr Phe Ser Thr Asn Pro
 195 200 205
 Glu Thr Gln Glu Cys Val Leu Glu Asp Ala Leu Ile Leu Ile Tyr Asp
 210 215 220
 Lys Lys Ile Ser Gly Ile Lys Asp Phe Leu Pro Val Leu Gln Gln Val
 225 230 235 240
 Ala Glu Ser Gly Arg Pro Leu Leu Ile Ile Ala Glu Glu Ile Glu Gly
 245 250 255
 Glu Ala Leu Ala Thr Leu Val Val Asn Arg Leu Arg Ala Gly Phe Arg
 260 265 270
 Val Cys Ala Val Lys Ala Pro Gly Phe Gly Asp Arg Arg Lys Ala Met
 275 280 285
 Leu Glu Asp Ile Ala Ile Leu Thr Gly Gly Gln Leu Val Ser Glu Glu
 290 295 300

Leu Gly Met Lys Leu Glu Asn Thr Thr Leu Ala Met Leu Gly Lys Ala
305 310 315 320

Lys Lys Val Ile Val Thr Lys Glu Asp Thr Thr Ile Val Glu Gly Leu
325 330 335

Gly Asn Lys Pro Asp Ile Gln Ala Arg Cys Asp Asn Ile Lys Lys Gln
340 345 350

Ile Glu Asp Ser Thr Ser Asp Tyr Asp Lys Glu Lys Leu Gln Glu Arg
355 360 365

Leu Ala Lys Leu Ser Gly Gly Val Ala Val Ile Arg Val Gly Ala Ala
370 375 380

Thr Glu Ile Glu Met Lys Glu Lys Lys Asp Arg Val Asp Asp Ala Gln
385 390 395 400

His Ala Thr Ile Ala Ala Val Glu Glu Gly Ile Leu Pro Gly Gly Gly
405 410 415

Thr Ala Leu Val Arg Cys Ile Pro Thr Leu Glu Ala Phe Leu Pro Met
420 425 430

Leu Ala Asn Glu Asp Glu Ala Ile Gly Thr Arg Ile Ile Leu Lys Ala
435 440 445

Leu Thr Ala Pro Leu Lys Gln Ile Ala Ser Asn Ala Gly Lys Glu Gly
450 455 460

Ala Ile Ile Cys Gln Gln Val Leu Ala Arg Ser Ala Asn Glu Gly Tyr
465 470 475 480

Asp Ala Leu Arg Asp Ala Tyr Thr Asp Met Ile Asp Ala Gly Ile Leu
485 490 495

Asp Pro Thr Lys Val Thr Arg Ser Ala Leu Glu Ser Ala Ala Ser Ile
500 505 510

Ala Gly Leu Leu Leu Thr Thr Glu Ala Leu Ile Ala Asp Ile Pro Glu
515 520 525

Glu Lys Ser Ser Ser Ala Pro Ala Met Pro Ser Ala Gly Met Asp Tyr
530 535 540

<210> 401

<211> 664

<212> PRT

<213> Chlamydia pneumoniae

<400> 401

Met Glu Lys Val Ser Ser Tyr Pro Ser Val Pro Leu Pro Leu Gly Ala
5 10 15

Ser Lys Ile Ser Pro Asn Arg Tyr Arg Phe Ala Leu Tyr Ala Ser Gln
20 25 30

Ala	Thr	Glu	Val	Ile	Leu	Ala	Leu	Thr	Asp	Glu	Asn	Ser	Glu	Val	Ile
		35					40					45			
Glu	Val	Pro	Leu	Tyr	Pro	Asp	Thr	His	Arg	Thr	Gly	Ala	Ile	Trp	His
	50					55					60				
Ile	Glu	Ile	Glu	Gly	Ile	Ser	Asp	Gln	Ser	Ser	Tyr	Ala	Phe	Arg	Val
	65				70					75					80
His	Gly	Pro	Lys	Lys	His	Gly	Met	Gln	Tyr	Ser	Phe	Lys	Glu	Tyr	Leu
				85					90					95	
Ala	Asp	Pro	Tyr	Ala	Lys	Asn	Ile	His	Ser	Pro	Gln	Ser	Phe	Gly	Ser
			100					105					110		
Arg	Lys	Lys	Gln	Gly	Asp	Tyr	Ala	Phe	Cys	Tyr	Leu	Lys	Glu	Glu	Pro
		115					120					125			
Phe	Pro	Trp	Asp	Gly	Asp	Gln	Pro	Leu	His	Leu	Pro	Lys	Glu	Glu	Met
	130					135					140				
Ile	Ile	Tyr	Glu	Met	His	Val	Arg	Ser	Phe	Thr	Gln	Ser	Ser	Ser	Ser
	145				150					155					160
Arg	Val	His	Ala	Pro	Gly	Thr	Phe	Leu	Gly	Ile	Ile	Glu	Lys	Ile	Asp
				165					170					175	
His	Leu	His	Lys	Leu	Gly	Ile	Asn	Ala	Val	Glu	Leu	Leu	Pro	Ile	Phe
			180					185					190		
Glu	Phe	Asp	Glu	Thr	Ala	His	Pro	Phe	Arg	Asn	Ser	Lys	Phe	Pro	Tyr
		195					200					205			
Leu	Cys	Asn	Tyr	Trp	Gly	Tyr	Ala	Pro	Leu	Asn	Phe	Phe	Ser	Pro	Cys
	210					215					220				
Arg	Arg	Tyr	Ala	Tyr	Ala	Ser	Asp	Pro	Cys	Ala	Pro	Ser	Arg	Glu	Phe
	225				230					235					240
Lys	Thr	Leu	Val	Lys	Thr	Leu	His	Gln	Glu	Gly	Ile	Glu	Val	Ile	Leu
				245					250					255	
Asp	Val	Val	Phe	Asn	His	Thr	Gly	Leu	Gln	Gly	Thr	Thr	Cys	Ser	Leu
			260					265					270		
Pro	Trp	Ile	Asp	Thr	Pro	Ser	Tyr	Tyr	Ile	Leu	Asp	Ala	Gln	Gly	His
		275					280					285			
Phe	Thr	Asn	Tyr	Ser	Gly	Cys	Gly	Asn	Thr	Leu	Asn	Thr	Asn	Arg	Ala
	290					295					300				
Pro	Thr	Thr	Gln	Trp	Ile	Leu	Asp	Ile	Leu	Arg	Tyr	Trp	Val	Glu	Glu
	305				310					315					320
Met	His	Val	Asp	Gly	Phe	Arg	Phe	Asp	Leu	Ala	Ser	Val	Phe	Ser	Arg
				325					330					335	

Gly 340	Pro	Ser	Gly 340	Ser	Pro	Leu	Gln	Phe 345	Ala	Pro	Val	Leu	Glu 350	Ala	Ile
Ser	Phe	Asp 355	Pro	Leu	Leu	Ala	Ser 360	Thr	Lys	Ile	Ile	Ala	Glu 365	Pro	Trp
Asp	Ala 370	Gly	Gly	Leu	Tyr	Gln 375	Val	Gly	Tyr	Phe	Pro 380	Thr	Leu	Ser	Pro
Arg 385	Trp	Ser	Glu	Trp	Asn 390	Gly	Pro	Tyr	Arg	Asp 395	Asn	Val	Lys	Ala	Phe 400
Leu	Asn	Gly	Asp	Gln 405	Asn	Leu	Ile	Gly	Thr 410	Phe	Ala	Ser	Arg	Ile 415	Ser
Gly	Ser	Gln	Asp 420	Ile	Tyr	Pro	His	Gly 425	Ser	Pro	Thr	Asn	Ser 430	Ile	Asn
Tyr	Val	Ser 435	Cys	His	Asp	Gly	Phe 440	Thr	Leu	Cys	Asp	Thr 445	Val	Thr	Tyr
Asn	His 450	Lys	His	Asn	Glu	Ala 455	Asn	Gly	Glu	Asp	Asn 460	Arg	Asp	Gly	Thr
Asp 465	Ala	Asn	Tyr	Ser	Tyr 470	Asn	Phe	Gly	Thr	Glu 475	Gly	Lys	Thr	Glu	Asp 480
Pro	Gly	Ile	Leu	Glu 485	Val	Arg	Glu	Arg	Gln 490	Leu	Arg	Asn	Phe	Phe 495	Leu
Thr	Leu	Met	Val 500	Ser	Gln	Gly	Ile	Pro 505	Met	Ile	Gln	Ser	Gly 510	Asp	Glu
Tyr	Ala	His 515	Thr	Ala	Glu	Gly	Asn 520	Asn	Asn	Arg	Trp	Ala 525	Leu	Asp	Ser
Asn	Ala 530	Asn	Tyr	Phe	Leu	Trp 535	Asp	Gln	Leu	Thr	Ala 540	Lys	Pro	Thr	Leu
Met 545	His	Phe	Leu	Cys	Asp 550	Leu	Ile	Ala	Phe	Arg 555	Lys	Lys	Tyr	Lys	Thr 560
Leu	Phe	Asn	Arg	Gly 565	Phe	Leu	Ser	Asn	Lys 570	Glu	Ile	Ser	Trp	Val 575	Asp
Ala	Met	Gly	Asn 580	Pro	Met	Thr	Trp	Arg 585	Pro	Gly	Asn	Phe	Leu 590	Ala	Phe
Lys	Ile	Lys 595	Ser	Pro	Lys	Ala	His 600	Val	Tyr	Val	Ala	Phe 605	His	Val	Gly
Ala	Gln	Asp	Gln	Leu	Ala	Thr 615	Leu	Pro	Lys	Ala	Ser 620	Ser	Asn	Phe	Leu
Pro 625	Tyr	Gln	Ile	Val	Ala 630	Glu	Ser	Gln	Gln	Gly 635	Phe	Val	Pro	Gln	Asn 640

Val Ala Thr Pro Thr Val Ser Leu Gln Pro His Thr Thr Leu Ile Ala
645 650 655

Ile Ser His Ala Lys Glu Val Thr
660

<210> 402

<211> 328

<212> PRT

<213> Chlamydia pneumoniae

<400> 402

Met Ala Phe Lys Glu Val Val Arg Val Ala Val Thr Gly Gly Lys Gly
5 10 15

Gln Ile Ala Tyr Asn Phe Leu Phe Ala Leu Ala His Gly Asp Val Phe
20 25 30

Gly Val Asp Arg Gly Val Asp Leu Arg Ile Tyr Asp Val Pro Gly Thr
35 40 45

Glu Arg Ala Leu Ser Gly Val Arg Met Glu Leu Asp Asp Gly Ala Tyr
50 55 60

Pro Leu Leu His Arg Leu Arg Val Thr Thr Ser Leu Asn Asp Ala Phe
65 70 75 80

Asp Gly Ile Asp Ala Ala Phe Leu Ile Gly Ala Val Pro Arg Gly Pro
85 90 95

Gly Met Glu Arg Gly Asp Leu Leu Lys Gln Asn Gly Gln Ile Phe Ser
100 105 110

Leu Gln Gly Ala Ala Leu Asn Thr Ala Ala Lys Arg Asp Ala Lys Ile
115 120 125

Phe Val Val Gly Asn Pro Val Asn Thr Asn Cys Trp Ile Ala Met Lys
130 135 140

His Ala Pro Arg Leu His Arg Lys Asn Phe His Ala Met Leu Arg Leu
145 150 155 160

Asp Gln Asn Arg Met His Ser Met Leu Ala His Arg Ala Glu Val Pro
165 170 175

Leu Glu Glu Val Ser Arg Val Val Ile Trp Gly Asn His Ser Ala Lys
180 185 190

Gln Val Pro Asp Phe Thr Gln Ala Arg Ile Ser Gly Lys Pro Ala Ala
195 200 205

Glu Val Ile Gly Asp Arg Asp Trp Leu Glu Asn Ile Leu Val His Ser
210 215 220

Val Gln Asn Arg Gly Ser Ala Val Ile Glu Ala Arg Gly Lys Ser Ser

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<210> 403
<211> 217
<212> PRT
<213> Chlamydia pneumoniae

<400> 403
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Thr Ser Leu Ser Ser Cys Ser Leu Asp Pro Lys Gly Tyr Asn Leu Glu
          20              25              30

Thr Lys Asn Ser Arg Asp Leu Asn Gln Glu Ser Val Ile Leu Lys Glu
          35              40              45

Asn Arg Glu Thr Pro Ser Leu Val Lys Arg Leu Ser Arg Arg Ser Arg
          50              55              60

Arg Leu Phe Ala Arg Arg Asp Gln Thr Gln Lys Asp Thr Leu Gln Val
          65              70              75              80

Gln Ala Asn Phe Lys Thr Tyr Ala Glu Lys Ile Ser Glu Gln Asp Glu
          85              90              95

Arg Asp Leu Ser Phe Val Val Ser Ser Ala Ala Glu Lys Ser Ser Ile
          100             105

Ser Leu Ala Leu Ser Gln Gly Glu Ile Lys Asp Ala Leu Tyr Arg Ile
          115             120             125

Arg Glu Val His Pro Leu Ala Leu Ile Glu Ala Leu Ala Glu Asn Pro
          130             135             140

Ala Leu Ile Glu Gly Met Lys Lys Met Gln Gly Arg Asp Trp Ile Trp
          145             150             155             160

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<210> 403
<211> 217
<212> PRT
<213> Chlamydia pneumoniae

<400> 403
Met Lys Arg Val Ile Tyr Lys Thr Ile Phe Cys Gly Leu Thr Leu Leu
          5              10              15

Thr Ser Leu Ser Ser Cys Ser Leu Asp Pro Lys Gly Tyr Asn Leu Glu
          20              25              30

Thr Lys Asn Ser Arg Asp Leu Asn Gln Glu Ser Val Ile Leu Lys Glu
          35              40              45

Asn Arg Glu Thr Pro Ser Leu Val Lys Arg Leu Ser Arg Arg Ser Arg
          50              55              60

Arg Leu Phe Ala Arg Arg Asp Gln Thr Gln Lys Asp Thr Leu Gln Val
          65              70              75              80

Gln Ala Asn Phe Lys Thr Tyr Ala Glu Lys Ile Ser Glu Gln Asp Glu
          85              90              95

Arg Asp Leu Ser Phe Val Val Ser Ser Ala Ala Glu Lys Ser Ser Ile
          100             105

Ser Leu Ala Leu Ser Gln Gly Glu Ile Lys Asp Ala Leu Tyr Arg Ile
          115             120             125

Arg Glu Val His Pro Leu Ala Leu Ile Glu Ala Leu Ala Glu Asn Pro
          130             135             140

Ala Leu Ile Glu Gly Met Lys Lys Met Gln Gly Arg Asp Trp Ile Trp
          145             150             155             160

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Asn Leu Phe Leu Thr Gln Leu Ser Glu Val Phe Ser Gln Ala Trp Ser
 165 170 175

Gln Gly Val Ile Ser Glu Glu Asp Ile Ala Ala Phe Ala Ser Thr Leu
 180 185 190

Gly Leu Asp Ser Gly Thr Val Ala Ser Ile Val Gln Gly Glu Arg Trp
 195 200 205

Pro Glu Leu Val Asp Ile Val Ile Thr
 210 215

<210> 404

<211> 270

<212> PRT

<213> Chlamydia pneumoniae

<400> 404

Met Ile Ile Ile Lys Asn Asn Glu Leu Met Ile Arg Arg Phe Phe Lys
 5 10 15

Thr Leu Phe Pro Pro Gly Pro Gln Tyr Ser Leu Cys Tyr Ala Ser Ile
 20 25 30

Leu Ile Val Leu Ser Ser Leu Val Cys Val Pro Thr Phe Cys Trp Leu
 35 40 45

Phe Leu Pro Glu Leu Ser Leu Ser Lys Phe Asn Pro Ser Pro Ile Arg
 50 55 60

Asn Leu Phe Leu Val Ser Ser Thr Leu Ser Lys Val Pro Pro Thr Ala
 65 70 75 80

Ile Ala Glu His Leu Arg Leu Ser Ala Asp Ala Pro Thr Tyr Leu His
 85 90 95

Glu Phe Ser Ile Lys Glu Ala Glu Ser Ser Leu His Ala Leu Gly Ile
 100 105 110

Phe Ser Ser Leu Val Ile Glu Lys Ser Pro Asp Asn Lys Gly Ile Thr
 115 120 125

Ile Phe Tyr Thr Leu Gln Thr Pro Ile Ala Tyr Val Gly Asn Arg Ser
 130 135 140

Asn Thr Leu Cys Asn Leu Glu Gly Ser Cys Phe Leu Gly Gln Pro Tyr
 145 150 155 160

Phe Pro Ser Leu Asn Leu Pro Gln Ile Phe Phe Ser Gln Glu Asp Leu
 165 170 175

Lys Met Gln Lys Leu Pro Lys Glu Lys Met Leu Phe Thr Lys Ile Leu
 180 185 190

Leu Lys Glu Leu Ala Met Glu Ser Pro Lys Ile Ile Asp Leu Ser Leu
 195 200 205

Lys Leu Thr Ser Phe Asp Leu Leu Gln Ala Ala Leu Leu Gln Ser Val

195					200					205					
Ala	Asn	Asn	Asn	Lys	Ala	Ala	Glu	Leu	Leu	Lys	Glu	Met	Gln	Asp	Asn
210					215					220					
Pro	Val	Val	Pro	Gly	Lys	Thr	Pro	Ala	Ile	Ala	Gln	Ser	Leu	Val	Asp
225				230					235						240
Gln	Thr	Asp	Ala	Thr	Ala	Thr	Gln	Ile	Glu	Lys	Asp	Gly	Asn	Ala	Ile
				245					250					255	
Arg	Asp	Ala	Tyr	Phe	Ala	Gly	Gln	Asn	Ala	Ser	Gly	Ala	Val	Glu	Asn
			260					265					270		
Ala	Lys	Ser	Asn	Asn	Ser	Ile	Ser	Asn	Ile	Asp	Ser	Ala	Lys	Ala	Ala
		275					280					285			
Ile	Ala	Thr	Ala	Lys	Thr	Gln	Ile	Ala	Glu	Ala	Gln	Lys	Lys	Phe	Pro
	290					295					300				
Asp	Ser	Pro	Ile	Leu	Gln	Glu	Ala	Glu	Gln	Met	Val	Ile	Gln	Ala	Glu
305				310						315					320
Lys	Asp	Leu	Lys	Asn	Ile	Lys	Pro	Ala	Asp	Gly	Ser	Asp	Val	Pro	Asn
				325					330					335	
Pro	Gly	Thr	Thr	Val	Gly	Gly	Ser	Lys	Gln	Gln	Gly	Ser	Ser	Ile	Gly
			340					345					350		
Ser	Ile	Arg	Val	Ser	Met	Leu	Leu	Asp	Asp	Ala	Glu	Asn	Glu	Thr	Ala
		355					360					365			
Ser	Ile	Leu	Met	Ser	Gly	Phe	Arg	Gln	Met	Ile	His	Met	Phe	Asn	Thr
	370					375					380				
Glu	Asn	Pro	Asp	Ser	Gln	Ala	Ala	Gln	Gln	Glu	Leu	Ala	Ala	Gln	Ala
385				390					395						400
Arg	Ala	Ala	Lys	Ala	Ala	Gly	Asp	Asp	Ser	Ala	Ala	Ala	Ala	Leu	Ala
				405					410					415	
Asp	Ala	Gln	Lys	Ala	Leu	Glu	Ala	Ala	Leu	Gly	Lys	Ala	Gly	Gln	Gln
			420					425					430		
Gln	Gly	Ile	Leu	Asn	Ala	Leu	Gly	Gln	Ile	Ala	Ser	Ala	Ala	Val	Val
		435					440					445			
Ser	Ala	Gly	Val	Pro	Pro	Ala	Ala	Ala	Ser	Ser	Ile	Gly	Ser	Ser	Val
	450					455					460				
Lys	Gln	Leu	Tyr	Lys	Thr	Ser	Lys	Ser	Thr	Gly	Ser	Asp	Tyr	Lys	Thr
465				470					475						480
Gln	Ile	Ser	Ala	Gly	Tyr	Asp	Ala	Tyr	Lys	Ser	Ile	Asn	Asp	Ala	Tyr
				485					490					495	
Gly	Arg	Ala	Arg	Asn	Asp	Ala	Thr	Arg	Asp	Val	Ile	Asn	Asn	Val	Ser

510

Asn Ile Gly Ser Leu Tyr Ser Gly Tyr Leu Gln
645 650

<213> Chlamydia trachomatis serovar D

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cgttatcagat	ccctgcagca	gaaatgttct	gtatatcctt	tggaaagtgg	aacggtaaaa	960
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<210> 407

<211> 1827

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 407

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caagatttga gttttttaga gcatttatta caggttaaat atgctcctaa aacatggaaa 180
gagcaatact taggatggga tcttgttcaa agctccgttt ctgcacagca gaagcttcgt 240
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attattcttg cggaagatgg tagttttt

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<210> 408

<211> 804

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 408

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cccatcggtc tatggctgac tctgcctagt tttttaaatt tcaagcactc cctaacgcct 180
attaagacat tgtttcttac ctgtacggag cctccttgcc ttcctgagcc tttttctctg 240
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gccgagcact ttttaaataa attaggagtt ttttctttta tttctattga gaaggttctt 360
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 atcggtaaaa ttatcggtaa agaaggacgc actattaagg ctatccgtac tttatttggtt 180
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<210> 412
 <211> 1941
 <212> DNA
 <213> Chlamydia trachomatis serovar D

<400> 412
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<210> 413
 <211> 693
 <212> DNA
 <213> Chlamydia trachomatis serovar D

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<210> 414

<211> 1599

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 414

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<210> 415

<211> 1395

<212> DNA

<213> Chlamydia trachomatis serovar D

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<212> DNA
<213> Chlamydia trachomatis serovar D

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<210> 417
<211> 1659
<212> DNA
<213> Chlamydia trachomatis serovar D
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<210> 418

<211> 576

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 418

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<210> 419

<211> 825

<212> DNA

<213> Chlamydia trachomatis serovar D

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<211> 5310

<212> DNA

<213> Chlamydia trachomatis serovar D

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<213> Chlamydia trachomatis serovar D

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<211> 1980

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 422

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<211> 696

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 424

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tctcgtatctt gggatatgat gatagagcag ggattgcccg aagatggtaa gtcttaccta 3360
tttgatggta aaaccggaga gcgtttcgat agcaaagtgg tcgttgata catctacatg 3420
ttgaaattga gtcacttaat tgctgataag atccacgctc gttctatagg accttactct 3480
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atggaggtat gggctttaga ggcgtatggg gtagctcata tgttacaaga gattctgact 3600
gttaagtccg acgatgtttc gggagaagaa cgtatctacg aatcaatcgt gaaaggagaa 3660
aacttacttc gttctggaac gcctgagtcg ttcaacgttt tgattaaaga aatgcaagg 3720
ctagggcctg atgttcgccc tatggtagta gatgct 3756

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<210> 426

<211> 894

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 426

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atgttgaaaa ttgatttaac aggaaaaaatt gctttcatag ccggcatagg cgatgataac 60
gggtatggct ggggcattgc caaaatgtta gcagaagcag gcgcaaccat acttggtggg 120
acctgggttc ctatctataa aattttctct caatctttgg agttaggaaa attcaatgca 180

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tctcgtgaac tctccaatgg agaattgcta acttttcgcta aaatctatcc catggatgcc 240
agttttcgaca ccccagaaga tattcctcag gaaatttttg aaaataaacg ttacaaagat 300
ctttctgggt acactgtatc cgaagttgta gaacagggtga aaaaacattt tggacacatt 360
gatattcttg ttactctttt agcaaacagt ccggaaattg ctaaaccatt acttgatacc 420
tctcgtaaag gctatctttg cgccttaagt acatccagct actcctttat cagccttctc 480
tctcattttg gcccaattat gaatgcagga gctagcacca tctctctaac ttatcttgct 540
tccatgcgtg ctggtccagg gtatggcgga ggaatgaacg cagcaaaagc tgcttttagaa 600
agtatacaaa aagtaactggc ttgggaagcc ggccgacgtt ggggagtcgc agtgaatact 660
atctcggcag ggccattagc tagccgtgca ggaaaagcta ttggatttat tgagagaatg 720
gtggattact accaagactg ggctccacta ccttctccaa tggaagctga gcaagtaggc 780
gcagcagcag ccttcttagt ctctccocta gctagcgcaa ttacgggaga aactctctat 840
gtggatcacg gagccaatgt gatgggcata ggtccagaaa tgtttcctaa ggat 894

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<210> 427

<211> 894

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 427

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ctacttcatg atcgtgttgt aaaggtcttg catcaatact atgattctgg ttggcagtta 120
ttttttctaa ctggcagata tttttcttat gcatactctc tttttcaaaa cttttcggtt 180
ccttttctat taggtagcca gaatggttct tccgtgtggg cctccacgga taaagagtgt 240
atttattttc gtagcttgtc tcgagatttt ctatatgttt tagagaaata ttttgaagat 300
ttagatctca ttgctgttat agaactctgga gcctctaata gtgatgtata ctttcgaaag 360
ggattagggg aaacatctca ggaactcaaa gogattcttg atgctgtgta ttttcctaca 420
ccagaagctg cgcgactgct ggtggatggt cagggacatt tatcagaaga attttcttat 480
gaagattttg ccattgccaa atttttcggg gagagagagg aagtgaagaa aattatggat 540
agattttatt aatctccaga agttttctca caggtaacca tgaattacat gcgttggcct 600
tttgattttc aatacgcagt gcttttactt acttttaaaag atgtttcaaa aggttttgct 660
gtagatcaag ttgttcagac cttctataaa gagaataaag cttttattat ggcttctggg 720
gatgatgcta acgatatcga cctgctatct cgaggagatt ttaaaattgt tatacagacg 780
gctccagagg agatgcatgg attagcggac tttttggctc ccccggcgaa ggattttggt 840
attctctccg cctgggaagc ttggtgagctg cgttacaaac agctagttaa tcct 894

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<210> 428

<211> 459

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 428

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atgttgccgt tgtttcaaca tatattgtgt tttttagaag aagacccttc gttttagac 60
gtccctcaag agctttcttt tgtcaatgaa gctttctctg gttctatgcg ttgggaagta 120
ggtaggatgc taggctcttt acttctcctg ttagggatat ttggaggggg gtgtttgcta 180
tttcgacgtt ttttgcttcc ccgcggacat ctctctagcg gcaattcgtc cattaagatt 240
ttggatcaac gggttttggc ttcaaaaacc tccatctatg tgattaaagt agcgaacaag 300
actttagtgt ttgctgagag aggagagcga gtgaccttat tatctgaatt tcctccgaat 360
acagatctta atgagctaata acagaaggat caaaaaaaac cttcgactcc tcgaggggag 420
atgctttcag gtttcttaaa gcaatttaaa gaaaagaaa 459

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<210> 429

<211> 1707

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 429

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ttaccagaag acgttaaaca atttaaagac cttctctacg cgatgtatgg cttcaccgcg 120
acagaagaag aacccactag cgaagtacat cctgggtcga tcctaaaagg tacagttggt 180
gacataagca aagactttgt tgttgtagat gtcggcttaa aatctgaggg agttattcct 240
atgtctgagt ttatcgactc ttcagaaggt ttaactgtcg gagccgaagt cgaagtttac 300
ctagacccaaa ctgaggatga cgaaggaaaaa gttgttttat ccagagaaaa agcaacaaga 360
caacgacaat gggaatacat tcttgctcac tgcgaggaag gttctattgt taagggacaa 420
attacccgaa aagttaaggg tggtttgatc gtagatattg gtatggaagc cttccttcca 480
ggatcccaaa tagacaataa gaagatcaag aacttagatg attacgtagg caaggtttgt 540
gagttcaaaa ttctcaaaat caacgtagat cgtcggaaac ttgttgatc tagaagagaa 600
cttctcgaag ctgaacgcac ttctaagaaa gcagagttga tcgagcaaat cactatcggt 660
gagcgtcgca aaggtatcgt taagaatatc acagatttcg gagtattcct ggatcctgat 720
ggcattgacg gcctactcca cattacagac atgacatgga aacgcattcg tcacccatcc 780
gaaatggttg aactcaacca agaattggaa gtcacatccc ttagcgttga taaagaaaaa 840
ggtcgcgtag ctcttggcct caaacaataa gagcataatc cttgggaaga tattgagaag 900
aaatatcctc caggaaaacg tgttcgcgga aaaattgtta aactccttcc ttatggagca 960
tttattgaaa tcgaagaagg aattgaaggc cttattcacg tttcagagat gtcttgggtt 1020
aagaacattg tagatcctaa tgaagtggtc aacaaagggt atgaagtcga agtagttgtt 1080
ctttctatcc aaaaagatga aggaaaaatc tctctcggtc tcaaacaac aaaacacaat 1140
ccttgggata acattgaaga aaaatatcct atcggcctcc gcgtaacagc agaaattaaa 1200
aatctgacaa actacggagc tttcgttgag ttggagccag gaatcgaagg tttgatccat 1260
atctctgaca tgagttggat taaaaaagtt tcccatcctt cagagctctt caaaaaaggt 1320
aataccgtcg aagcagttat tctgtctgta gacaaagaaa gcaaaaaaat cactttgggc 1380
gtgaaacaat taactcctaa tccatgggat gagattgaag ttatgttccc tgtcggaggt 1440
gatattctct gcgtagtaac taaaattacg gctttcggag ctttcgttga gttgcaaaat 1500
ggtatcgaag gactgatcca tgtatccgag ctttcagaga aaccttttgc taaaattgaa 1560
gatgtttctt ctattggaga caaagtttct gctaaagtta tcaagctaga cccagatcac 1620
aagaaagttt ctctttctat taaagagttc cttgttcatg ggggagatgc tggtcacgat 1680
gcggaagaag aatcttctga cagagac 1707

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<210> 430

<211> 1998

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 430

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atggaatctt tgtctgttcg ttccactatc cctttaccto taggagccaa aaagctctcc 60
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ttagaccctc tttctgaaat tcatgaaatt cctctatctt ctaccgacca caggactgga 180
gccatctggc atatcgaaat tgcaggcatt tctagtgaat ggtcgtatgc ttataaacta 240
cgtggtagag acttgagctc tcaaaaagttt gctacagatt cttacatcgc agacccttat 300
tctaagaata tctactcccc tcaactatct ggatccccta aacaagaaaa ggattacgca 360
tttagttacc tgaaacatga ggattttgac tgggaaggcg aactccttt gcaccttcca 420
aaagaaaatt acttcattta tgaaatgcat gttcgggcat tcacccgaga tccgtcttcc 480
caggtttccc atcctggaac tttccttggg attatcgaaa aaatagacca cctcaaacaa 540
ctaggcggtc atgcagttga actccttccct attttcgaat tcgatgaaac cgtccatcca 600
tttaaaaaatc aggacttccc ccacctgtgt aactattggg ggtattcttc ggtgaatttt 660
ttctgcccc ctgcggtta tacttatggg gcagacccct gcgctccggc ccgagagttc 720
aagactcttg tcaaagcatt acaccgtgcg ggaatcgaag tcattctcga tgtcgttttc 780
aatcatacag gctttgaagg cacaagctgc cctcttccct ggatagatct agaatcctat 840
tatatggtca atgatcatgg ggatctcatg aatttctccg ggtgtggtaa tacagtcaat 900
accaacaccc ccactactct gaaatggatt cttgatgctt tgcggtactg ggtacaggaa 960
atgcacgtag atggatttcg ttttgattta gcctcagct tctctagaga tccacaagga 1020
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actaaactga tcgctgaacc ttgggacgct ggaggtttgt atcagcttgg aacttccc 1140
tctatatcaa cccgatggag cgagtggaa gtagtcaac gtagccatgt aaaagccttc 1200
ctgaatggag atgctcatca tttgcttcac gaatatctgg atctcatgac 1260
atctatccca atgggaaacc tacgaactcg attaactata tctgctctca tgatggcttc 1320

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acactctacg atactgttgc ctataacgat aagcacaatg aagagaatgg tgaataacaat 1380
cgtgatggga cttcagcaaa ctatagctat aactttggct gcgaaggaga aacgacagat 1440
cccaccattt gcgctctacg tgaacgcaa atgaaaaact tctttcttgc tctcttttta 1500
tctcaaggaa ttcccatgat acaatccgga gatgaatatg ggcacacagc ttatggaaat 1560
aataatcact ggtgcttaga cacaaagatc aattactttc tttgggatcg attagctgaa 1620
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aaagaacatt tggcctatga aaaaattgta gatagcacia caggattctt ttctcagata 1920
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<210> 431

<211> 609

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 431

Met Gly Phe Trp Arg Thr Ser Ile Met Lys Met Asn Arg Ile Trp Leu
5 10 15

Leu Leu Leu Thr Phe Ser Ser Ala Ile His Ser Pro Val Gln Gly Glu
20 25 30

Ser Leu Val Cys Lys Asn Ala Leu Gln Asp Leu Ser Phe Leu Glu His
35 40 45

Leu Leu Gln Val Lys Tyr Ala Pro Lys Thr Trp Lys Glu Gln Tyr Leu
50 55 60

Gly Trp Asp Leu Val Gln Ser Ser Val Ser Ala Gln Gln Lys Leu Arg
65 70 75 80

Thr Gln Glu Asn Pro Ser Thr Ser Phe Cys Gln Gln Val Leu Ala Asp
85 90 95

Phe Ile Gly Gly Leu Asn Asp Phe His Ala Gly Val Thr Phe Phe Ala
100 105 110

Ile Glu Ser Ala Tyr Leu Pro Tyr Thr Val Gln Lys Ser Ser Asp Gly
115 120 125

Arg Phe Tyr Phe Val Asp Ile Met Thr Phe Ser Ser Glu Ile Arg Val
130 135 140

Gly Asp Glu Leu Leu Glu Val Asp Gly Ala Pro Val Gln Asp Val Leu
145 150 155 160

Ala Thr Leu Tyr Gly Ser Asn His Lys Gly Thr Ala Ala Glu Glu Ser
165 170 175

Ala Ala Leu Arg Thr Leu Phe Ser Arg Met Ala Ser Leu Gly His Lys
180 185 190

Val Pro Ser Gly Arg Thr Thr Leu Lys Ile Arg Arg Pro Phe Gly Thr
195 200 205

Thr Arg Glu Val Arg Val Lys Trp Arg Tyr Val Pro Glu Gly Val Gly
 210 215 220
 Asp Leu Ala Thr Ile Ala Pro Ser Ile Arg Ala Pro Gln Leu Gln Lys
 225 230 235 240
 Ser Met Arg Ser Phe Phe Pro Lys Lys Asp Asp Ala Phe His Arg Ser
 245 250 255
 Ser Ser Leu Phe Tyr Ser Pro Met Val Pro His Phe Trp Ala Glu Leu
 260 265 270
 Arg Asn His Tyr Ala Thr Ser Gly Leu Lys Ser Gly Tyr Asn Ile Gly
 275 280 285
 Ser Thr Asp Gly Phe Leu Pro Val Ile Gly Pro Val Ile Trp Glu Ser
 290 295 300
 Glu Gly Leu Phe Arg Ala Tyr Ile Ser Ser Val Thr Asp Gly Asp Gly
 305 310 315 320
 Lys Ser His Lys Val Gly Phe Leu Arg Ile Pro Thr Tyr Ser Trp Gln
 325 330 335
 Asp Met Glu Asp Phe Asp Pro Ser Gly Pro Pro Pro Trp Glu Glu Phe
 340 345 350
 Ala Lys Ile Ile Gln Val Phe Ser Ser Asn Thr Glu Ala Leu Ile Ile
 355 360 365
 Asp Gln Thr Asn Asn Pro Gly Gly Ser Val Leu Tyr Leu Tyr Ala Leu
 370 375 380
 Leu Ser Met Leu Thr Asp Arg Pro Leu Glu Leu Pro Lys His Arg Met
 385 390 395 400
 Ile Leu Thr Gln Asp Glu Val Val Asp Ala Leu Asp Trp Leu Thr Leu
 405 410 415
 Leu Glu Asn Val Asp Thr Asn Val Glu Ser Arg Leu Ala Leu Gly Asp
 420 425 430
 Asn Met Glu Gly Tyr Thr Val Asp Leu Gln Val Ala Glu Tyr Leu Lys
 435 440 445
 Ser Phe Gly Arg Gln Val Leu Asn Cys Trp Ser Lys Gly Asp Ile Glu
 450 455 460
 Leu Ser Thr Pro Ile Pro Leu Phe Gly Phe Glu Lys Ile His Pro His
 465 470 475 480
 Pro Arg Val Gln Tyr Ser Lys Pro Ile Cys Val Leu Ile Asn Glu Gln
 485 490 495
 Asp Phe Ser Cys Ala Asp Phe Phe Pro Val Val Leu Lys Asp Asn Asp
 500 505 510

Arg Ala Leu Ile Val Gly Thr Arg Thr Ala Gly Ala Gly Gly Phe Val
 515 520 525

Phe Asn Val Gln Phe Pro Asn Arg Thr Gly Ile Lys Thr Cys Ser Leu
 530 535 540

Thr Gly Ser Leu Ala Val Arg Glu His Gly Ala Phe Ile Glu Asn Ile
 545 550 555 560

Gly Val Glu Pro His Ile Asp Leu Pro Phe Thr Ala Asn Asp Ile Arg
 565 570 575

Tyr Lys Gly Tyr Ser Glu Tyr Leu Asp Lys Val Lys Lys Leu Val Cys
 580 585 590

Gln Leu Ile Asn Asn Asp Gly Thr Ile Ile Leu Ala Glu Asp Gly Ser
 595 600 605

Phe

<210> 432

<211> 268

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 432

Met Pro Pro Arg Ser Pro Ser Phe Leu Val His Ile Trp Arg Leu Phe
 5 10 15

Phe Ala Lys Gly Pro Asn Tyr Ser Leu Pro Tyr Ala Phe Leu Cys Ile
 20 25 30

Phe Val Ser Val Leu Val Phe Leu Pro Ile Gly Leu Trp Leu Thr Leu
 35 40 45

Pro Ser Phe Leu Asn Phe Lys His Ser Leu Thr Pro Ile Lys Thr Leu
 50 55 60

Phe Leu Thr Cys Thr Glu Pro Pro Cys Leu Pro Glu Pro Phe Phe Ser
 65 70 75 80

Asp Ile Leu His Leu Ser Ala Asp Ser Pro Pro Ala Leu Gln Thr Phe
 85 90 95

Ser Thr Lys Ser Ala Glu His Phe Leu Asn Glu Leu Gly Val Phe Ser
 100 105 110

Phe Ile Ser Ile Glu Lys Val Pro Asp His Lys Gly Leu Ala Ile Ser
 115 120 125

Tyr Ala Leu His Thr Pro Leu Ala Phe Leu Gly Asn Gln Thr His Thr
 130 135 140

Phe Ile Gly Tyr Glu Gly Gln Thr Phe Pro Ala Leu Pro Phe Phe Gln

145 150 155 160
 Ser Leu Glu Leu Pro Thr Val Phe Phe Ser Gln Gln Ala Leu Ser Gln
 165 170 175
 Thr Arg Ile Pro His Gln Thr Leu Ser Ile Val Thr Ser Leu Ile Asp
 180 185 190
 Gln Leu Gln Met Asp Pro Pro Ser Ile Ile Asp Leu Ser Gln Ile Asp
 195 200 205
 His Tyr Pro Gly Glu Phe Val Val Ser Leu Ser Ser Gly Thr Leu Leu
 210 215 220
 Arg Phe Arg Lys Asp Ser Phe Leu Pro Gly Ile Gln His Tyr Gln Gln
 225 230 235 240
 Ala Leu Ser Leu Gly Ala Phe Ser Pro Gln Gln Ala Val Ile Cys Asp
 245 250 255
 Leu Arg Cys Glu Asp Tyr Leu Leu Leu Lys Arg Lys
 260 265

 <210> 433
 <211> 221
 <212> PRT
 <213> Chlamydia trachomatis serovar D

 <400> 433
 Met Lys Lys Phe Ile Tyr Lys Tyr Ser Phe Gly Ala Leu Leu Leu Leu
 5 10 15
 Ser Gly Leu Ser Gly Leu Ser Ser Cys Cys Ala Asn Ser Tyr Gly Ser
 20 25 30
 Thr Leu Ala Lys Asn Thr Ala Glu Ile Lys Glu Glu Ser Val Thr Leu
 35 40 45
 Arg Glu Lys Pro Asp Ala Gly Cys Lys Lys Lys Ser Ser Cys Tyr Leu
 50 55 60
 Arg Lys Phe Phe Ser Arg Lys Lys Pro Lys Glu Lys Thr Glu Pro Val
 65 70 75 80
 Leu Pro Asn Phe Lys Ser Tyr Ala Asp Pro Met Thr Asp Ser Glu Arg
 85 90 95
 Lys Asp Leu Ser Phe Val Val Ser Ala Ala Ala Asp Lys Ser Ser Ile
 100 105 110
 Ala Leu Ala Met Ala Gln Gly Glu Ile Lys Gly Ala Leu Ser Arg Ile
 115 120 125
 Arg Glu Ile His Pro Leu Ala Leu Leu Gln Ala Leu Ala Glu Asp Pro
 130 135 140

Ala Leu Ile Ala Gly Met Lys Lys Met Gln Gly Arg Asp Trp Val Trp
145 150 155 160

Asn Ile Phe Ile Thr Glu Leu Ser Lys Val Phe Ser Gln Ala Ala Ser
165 170 175

Leu Gly Ala Phe Ser Val Ala Asp Val Ala Ala Phe Ala Ser Thr Leu
180 185 190

Gly Leu Asp Ser Gly Thr Val Thr Ser Ile Val Asp Gly Glu Arg Trp
195 200 205

Ala Glu Leu Ile Asp Val Val Ile Gln Asn Pro Ala Ile
210 215 220

<210> 434

<211> 490

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 434

Met Ser Asp Leu Ser Asp Leu Phe Lys Thr His Phe Thr Gln Tyr Ala
5 10 15

Ser Tyr Val Ile Leu Glu Arg Ala Ile Pro His Val Leu Asp Gly Leu
20 25 30

Lys Pro Val Gln Arg Arg Leu Leu Trp Thr Leu Phe Arg Met Asp Asp
35 40 45

Gly Lys Met His Lys Val Ala Asn Ile Ala Gly Arg Thr Met Ala Leu
50 55 60

His Pro His Gly Asp Ala Pro Ile Val Glu Ala Leu Val Val Leu Ala
65 70 75 80

Asn Lys Gly Phe Leu Ile Glu Thr Gln Gly Asn Phe Gly Asn Pro Leu
85 90 95

Thr Gly Asp Pro His Ala Ala Ala Arg Tyr Ile Glu Ala Arg Leu Ser
100 105 110

Pro Leu Ala Lys Glu Val Leu Phe Asn Thr Asp Leu Met Thr Phe His
115 120 125

Asp Ser Tyr Asp Gly Arg Glu Gln Glu Pro Asp Ile Leu Ala Ala Lys
130 135 140

Ile Pro Leu Leu Leu Leu His Gly Val Asp Gly Ile Ala Val Gly Met
145 150 155 160

Thr Thr Lys Ile Phe Pro His Asn Phe Cys Asp Leu Leu Glu Ala Gln
165 170 175

Ile Ala Ile Leu Asn Asp Gln Pro Phe Ser Leu Leu Pro Asp Phe Pro
180 185 190

Pro Gly Gly Thr Met Asp Ala Ser Asp Tyr Gln Asp Gly Leu Gly Ser
 195 200 205
 Ile Val Leu Arg Ala Thr Ile Asp Ile Ile Asn Asp Lys Thr Leu Leu
 210 215 220
 Ile Lys Glu Ile Cys Pro Ser Thr Thr Thr Glu Thr Leu Ile Arg Ser
 225 230 235 240
 Ile Glu Asn Ala Ala Lys Arg Gly Ile Ile Lys Ile Asp Ser Ile Gln
 245 250 255
 Asp Phe Ser Thr Asp Leu Pro His Ile Glu Ile Lys Leu Pro Lys Gly
 260 265 270
 Ile Tyr Ala Lys Asp Leu Leu Arg Pro Leu Tyr Thr His Thr Glu Cys
 275 280 285
 Gln Val Ile Leu Thr Ser Arg Pro Thr Ala Ile Tyr Gln Gly Lys Pro
 290 295 300
 Trp Glu Thr Thr Ile Ser Glu Ile Leu Arg Leu Gln Thr Lys Thr Leu
 305 310 315 320
 Gln Asn Tyr Leu Lys Lys Glu Leu Leu Ile Leu Glu Asp Ser Leu Ser
 325 330 335
 Arg Glu Leu Tyr His Lys Thr Leu Glu Tyr Leu Phe Ile Lys His Lys
 340 345 350
 Leu Tyr Asp Thr Val Arg Ser Met Leu Ser Lys Arg Lys Thr Ser Pro
 355 360 365
 Ser Ser Ser Thr Ile His Asn Ala Val Leu Glu Ala Leu Thr Pro Phe
 370 375 380
 Leu Asp Thr Leu Pro Ala Pro Asp Lys Gln Ala Thr Ala Gln Leu Ala
 385 390 395 400
 Ala Leu Thr Ile Lys Lys Ile Leu Cys Phe Asp Glu Asn Ser Tyr Glu
 405 410 415
 Lys Glu Leu Ala Cys Leu Glu Lys Lys Arg Ser Ser Val Gln Lys Asp
 420 425 430
 Leu Ser Gln Leu Lys Lys Tyr Thr Val Leu Tyr Ile Lys Lys Leu Leu
 435 440 445
 Glu Thr Tyr Arg Gln Leu Gly His Arg Lys Thr Lys Ile Ala Lys Phe
 450 455 460
 Asp Asp Leu Pro Thr Glu Arg Val Ser Ala His Lys Lys Ala Lys Glu
 465 470 475 480
 Leu Ala Ala Leu Asp Gln Glu Glu Asn Phe
 485 490

<211> 78

<213> Chlamydia trachomatis serovar D

Met Lys Glu Phe Leu Ala Tyr Ile Val Lys Asn Leu Val Asp Lys Pro

Glu Glu Val His Leu Lys Glu Val Gln Gly Thr Asn Thr Ile Ile Tyr
20 25 30

Glu Leu Thr Val Ala Lys Gly Asp Ile Gly Lys Ile Ile Gly Lys Glu
35 40 45

Gly Arg Thr Ile Lys Ala Ile Arg Thr Leu Leu Val Ser Val Ala Ser
50 55 60

Arg Asp Asn Val Lys Val Ser Leu Glu Ile Met Glu Glu Arg
65 70 75

<211> 647

<213> Chlamydia trachomatis serovar D

Met Glu Ser Gly Pro Glu Ser Val Ser Ser Asn Gln Ser Ser Met Asn
5 10 15

Pro Ile Ile Asn Gly Gln Ile Ala Ser Asn Ser Glu Thr Lys Glu Ser
20 25 30

Thr Lys Glu Ser Glu Ala Ser Pro Ser Ala Ser Ser Ser Val Ser Ser
35 40 45

Trp Ser Phe Leu Ser Ser Ala Lys His Ala Leu Ile Ser Leu Arg Asp
50 55 60

Ala Ile Leu Asn Lys Asn Ser Ser Pro Thr Asp Ser Leu Ser Gln Leu
65 70 75 80

Glu Ala Ser Thr Ser Thr Ser Thr Val Thr Arg Val Ala Ala Arg Asp
85 90 95

Tyr Asn Glu Ala Lys Ser Asn Phe Asp Thr Ala Lys Ser Gly Leu Glu
100 105 110

Asn Ala Thr Thr Leu Ala Glu Tyr Glu Thr Lys Met Ala Asp Leu Met
115 120 125

Ala Ala Leu Gln Asp Met Glu Arg Leu Ala Lys Gln Lys Ala Glu Val
130 135 140

Thr 145	Arg	Ile	Lys	Glu	Ala 150	Leu	Gln	Glu	Lys	Gln	Glu	Val	Ile	Asp	Lys 160
Leu	Asn	Gln	Leu	Val 165	Lys	Leu	Glu	Lys	Gln 170	Asn	Gln	Thr	Leu	Lys 175	Glu
Thr	Leu	Thr	Thr 180	Thr	Asp	Ser	Ala	Asp 185	Gln	Ile	Pro	Ala	Ile	Asn 190	Ser
Gln	Leu	Glu 195	Ile	Asn	Lys	Asn	Ser 200	Ala	Asp	Gln	Ile	Ile 205	Lys	Asp	Leu
Glu	Gly 210	Gln	Asn	Ile	Ser	Tyr 215	Glu	Ala	Val	Leu	Thr 220	Asn	Ala	Gly	Glu
Val 225	Ile	Lys	Ala	Ser	Ser 230	Glu	Ala	Gly	Ile	Lys 235	Leu	Gly	Gln	Ala	Leu 240
Gln	Ser	Ile	Val	Asp 245	Ala	Gly	Asp	Gln	Ser 250	Gln	Ala	Ala	Val	Leu 255	Gln
Ala	Gln	Gln	Asn 260	Asn	Ser	Pro	Asp	Asn 265	Ile	Ala	Ala	Thr	Lys 270	Lys	Leu
Ile	Asp	Ala 275	Ala	Glu	Thr	Lys	Val 280	Asn	Glu	Leu	Lys	Gln 285	Glu	His	Thr
Gly	Leu 290	Thr	Asp	Ser	Pro	Leu 295	Val	Lys	Lys	Ala	Glu 300	Glu	Gln	Ile	Ser
Gln 305	Ala	Gln	Lys	Asp	Ile 310	Gln	Glu	Ile	Lys	Pro 315	Ser	Gly	Ser	Asp	Ile 320
Pro	Ile	Val	Gly 325	Pro	Ser	Gly	Ser	Ala	Ala 330	Ser	Ala	Gly	Ser	Ala 335	Val
Gly	Ala	Leu	Lys 340	Ser	Ser	Asn	Asn	Ser 345	Gly	Arg	Ile	Ser	Leu 350	Leu	Leu
Asp	Asp	Val 355	Asp	Asn	Glu	Met	Ala 360	Ala	Ile	Ala	Met	Gln 365	Gly	Phe	Arg
Ser	Met 370	Ile	Glu	Gln	Phe	Asn 375	Val	Asn	Asn	Pro	Ala 380	Thr	Ala	Lys	Glu
Leu 385	Gln	Ala	Met	Glu	Ala 390	Gln	Leu	Thr	Ala	Met 395	Ser	Asp	Gln	Leu	Val 400
Gly	Ala	Asp	Gly 405	Glu	Leu	Pro	Ala	Glu	Ile 410	Gln	Ala	Ile	Lys	Asp 415	Ala
Leu	Ala	Gln	Ala 420	Leu	Lys	Gln	Pro	Ser	Thr 425	Asp	Gly	Leu	Ala 430	Thr	Ala
Met	Gly 435	Gln	Val	Ala	Phe	Ala 440	Ala	Ala	Lys	Val	Gly	Gly 445	Gly	Ser	Ala

Leu His Ile Lys Ala Phe Pro Lys Tyr Leu Ser Ala Ile His Ser Arg
50 55 60

Cys Asp Asp Leu Glu Ala Arg Lys Leu Leu Leu Asp Asn Leu Met Asp
65 70 75 80

Glu Glu Asn Gly Tyr Pro Asn His Ile Asp Leu Trp Lys Gln Phe Val
85 90 95

Phe Ala Leu Gly Val Thr Pro Glu Glu Leu Glu Ala His Glu Pro Ser
100 105 110

Glu Ala Ala Lys Ala Lys Val Ala Thr Phe Met Arg Trp Cys Thr Gly
115 120 125

Asp Ser Leu Ala Ala Gly Val Ala Ala Leu Tyr Ser Tyr Glu Ser Gln
130 135 140

Ile Pro Arg Ile Ala Arg Glu Lys Ile Arg Gly Leu Thr Glu Tyr Phe
145 150 155 160

Gly Phe Ser Asn Pro Glu Asp Tyr Ala Tyr Phe Thr Glu His Glu Glu
165 170 175

Ala Asp Val Arg His Ala Arg Glu Glu Lys Ala Leu Ile Glu Met Leu
180 185 190

Leu Lys Asp Asp Ala Asp Lys Val Leu Glu Ala Ser Gln Glu Val Thr
195 200 205

Gln Ser Leu Tyr Gly Phe Leu Asp Ser Phe Leu Asp Pro Gly Thr Cys
210 215 220

Cys Ser Cys His Gln Ser Tyr
225 230

<210> 438

<211> 533

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 438

Met Ser Asn Ser Phe Arg Asp Gln Glu Gln Gly Leu Gln Ala Val Phe
5 10 15

Arg Ala Ala Arg Val Ile Ser His Met Phe Ser Gln Thr Ile Gly Pro
20 25 30

Tyr Gly Phe Ser Thr Ile Val His Asn Val Gln Asp Thr Arg Thr Thr
35 40 45

Gln Asp Ser Gln Ser Met Leu Lys Asp Ile Leu Phe Pro Asp Val Phe
50 55 60

Glu Asn Ile Gly Met Lys Leu Ile Arg Asp Thr Ala Leu Arg Thr Arg
65 70 75 80

Met Arg Phe Gly Asp Gly Ala Lys Thr Thr Ala Leu Leu Ile Glu Ala

				85						90						95					
Leu	Leu	Ala	Glu 100	Gly	Met	Thr	Gly	Ile 105	Gln	Lys	Gly	Leu	Asp 110	Pro	His						
Glu	Ile	His 115	Arg	Gly	Met	Leu	Leu 120	Ala	Glu	Lys	Lys	Ile 125	Gln	Glu	Val						
Phe	Tyr 130	Arg	Glu	Thr	Phe	Pro 135	Leu	Ser	Asp	Leu	Glu 140	His	Thr	Val	Tyr						
Val 145	Ser	Ser	Ile	Ala	Arg 150	Arg	Cys	Asn	Ser	Glu 155	Ile	Ala	Ser	Val	Leu 160						
Ser	Ser	Ala	Val	Gly 165	Tyr	Gly	Gly	Lys	Asn 170	Gly	Tyr	Tyr	Ile	Val 175	Glu						
Glu	His	Glu	Glu 180	His	Glu	Thr	Tyr	Trp 185	His	Ala	Glu	Glu	His 190	Ala	Val						
Trp	Asp	Phe 195	Gly	Tyr	Ala	Ser	Pro 200	Tyr	Phe	Ile	Thr	His 205	Ala	Glu	Thr						
Gly	Thr 210	Val	Glu	Tyr	Ser	Gln 215	Val	Tyr	Ile	Leu	Val 220	Ser	Glu	Gln	Pro						
Leu 225	His	Tyr	Ser	Asn 230	Pro	Ser	Phe	Leu	Thr	Phe 235	Leu	Gln	Ser	Val	Val 240						
Gln	Ala	Gly	Lys 245	Thr	Pro	Leu	Val	Ile	Leu 250	Ala	Glu	Ala	Phe 255	Asp	Lys						
Glu	Leu	Leu	Ala 260	Met	Leu	Glu	Met	Asn 265	Gln	Ile	Glu	Arg 270	Val	Phe	Pro						
Val	Cys	Ala 275	Val	Lys	Val	Ser	Gly 280	Lys	His	Ala	Arg 285	Glu	Ser	Leu	Glu						
Asp	Ile 290	Ala	Val	Leu	Thr	Gly 295	Ala	Thr	Leu	Leu	Ser 300	Glu	Met	Asp	Phe						
Glu 305	Asp	Ser	Glu	Glu 310	Glu	Arg	Ile	Thr	Asn 315	Arg	Leu	Gly	Phe	Val	Ala 320						
Gly	Ile	Cys	Val	Ser 325	Ser	Thr	Ser	Leu	Cys 330	Val	Pro	Arg	Glu	Thr 335	Asp						
Asn	Lys	Gln 340	Arg	Met	Ala	Glu	His	Cys 345	Ala	Phe	Leu	Gln 350	Asp	Lys	Leu						
Ser	Phe	Ser 355	Gln	Glu	Glu	Glu	Ala 360	Ser	Ala	Arg	Leu	Arg 365	Arg	Arg	Leu						
Ala	Arg 370	Leu	Ser	Ser	Gly 375	Glu	Val	Cys	Ile	His	Ile 380	Ala	Ala	Asp	Cys						
Ile	Pro	Gln	Glu	Glu	Ile	Gly	Tyr	Ile	Thr	Ser	Ser	Ile	Arg	Ala	Met						

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<210> 439
<211> 465
<212> PRT
<213> Chlamydia trachomatis serovar D

<400> 439
Met Asn Glu Ala Phe Asp Cys Val Val Ile Gly Ala Gly Pro Gly Gly
      5              10              15
Tyr Val Ala Ala Ile Thr Ala Ala Gln Ala Gly Leu Lys Thr Ala Leu
      20              25              30
Ile Glu Lys Arg Glu Ala Gly Gly Thr Cys Leu Asn Arg Gly Cys Ile
      35              40              45
Pro Ser Lys Ala Leu Leu Ala Gly Ala Glu Val Val Thr Gln Ile Arg
      50              55              60
His Ala Asp Gln Phe Gly Ile His Val Glu Gly Phe Ser Ile Asn Tyr
      65              70              75              80
Pro Ala Met Val Gln Arg Lys Asp Ser Val Val Arg Ser Ile Arg Asp
      85              90              95
Gly Leu Asn Gly Leu Ile Arg Ser Asn Lys Ile Thr Val Phe Ser Gly
      100             105             110

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Arg	Gly	Ser	Leu	Ile	Ser	Ser	Thr	Glu	Val	Lys	Ile	Leu	Gly	Glu	Asn
		115					120					125			
Pro	Ser	Val	Ile	Lys	Ala	His	Ser	Ile	Ile	Leu	Ala	Thr	Gly	Ser	Glu
	130					135					140				
Pro	Arg	Ala	Phe	Pro	Gly	Ile	Pro	Phe	Ser	Ala	Glu	Ser	Pro	Arg	Ile
145					150					155					160
Leu	Cys	Ser	Thr	Gly	Val	Leu	Asn	Leu	Lys	Glu	Ile	Pro	Gln	Lys	Met
				165					170					175	
Ala	Ile	Ile	Gly	Gly	Gly	Val	Ile	Gly	Cys	Glu	Phe	Ala	Ser	Leu	Phe
			180					185					190		
His	Thr	Leu	Gly	Ser	Glu	Val	Ser	Val	Ile	Glu	Ala	Ser	Ser	Gln	Ile
		195					200					205			
Leu	Ala	Leu	Asn	Asn	Pro	Asp	Ile	Ser	Lys	Thr	Met	Phe	Asp	Lys	Phe
	210					215					220				
Thr	Arg	Gln	Gly	Leu	Arg	Phe	Val	Leu	Glu	Ala	Ser	Val	Ser	Asn	Ile
225					230					235					240
Glu	Asp	Ile	Gly	Asp	Arg	Val	Arg	Leu	Thr	Ile	Asn	Gly	Asn	Val	Glu
				245					250					255	
Glu	Tyr	Asp	Tyr	Val	Leu	Val	Ser	Ile	Gly	Arg	Arg	Leu	Asn	Thr	Glu
			260					265					270		
Asn	Ile	Gly	Leu	Asp	Lys	Ala	Gly	Val	Ile	Cys	Asp	Glu	Arg	Gly	Val
		275					280					285			
Ile	Pro	Thr	Asp	Ala	Thr	Met	Arg	Thr	Asn	Val	Pro	Asn	Ile	Tyr	Ala
	290					295					300				
Ile	Gly	Asp	Ile	Thr	Gly	Lys	Trp	Gln	Leu	Ala	His	Val	Ala	Ser	His
305					310					315					320
Gln	Gly	Ile	Ile	Ala	Ala	Arg	Asn	Ile	Ala	Gly	His	Lys	Glu	Glu	Ile
				325					330					335	
Asp	Tyr	Ser	Ala	Val	Pro	Ser	Val	Ile	Phe	Thr	Phe	Pro	Glu	Val	Ala
			340					345					350		
Ser	Val	Gly	Leu	Ser	Pro	Thr	Ala	Ala	Gln	Gln	Gln	Lys	Ile	Pro	Val
		355					360					365			
Lys	Val	Thr	Lys	Phe	Pro	Phe	Arg	Ala	Ile	Gly	Lys	Ala	Val	Ala	Met
	370					375					380				
Gly	Glu	Ala	Asp	Gly	Phe	Ala	Ala	Ile	Ile	Ser	His	Glu	Thr	Thr	Gln
385					390					395					400
Gln	Ile	Leu	Gly	Ala	Tyr	Val	Ile	Gly	Pro	His	Ala	Ser	Ser	Leu	Ile
				405					410					415	

Glu Thr Ser Met Ala Glu Ser Leu Ser Thr Asn Val Ile Ser Leu Ala

	35		40		45														
Asp	Thr	Lys	Ala	Lys	Asp	Asn	Thr	Ser	His	Lys	Ser	Lys	Lys	Ala	Arg				
	50					55					60								
Lys	Asn	His	Ser	Lys	Glu	Thr	Pro	Val	Asp	Arg	Lys	Glu	Val	Ala	Pro				
	65				70					75					80				
Val	His	Glu	Ser	Lys	Ala	Thr	Gly	Pro	Lys	Gln	Asp	Ser	Cys	Phe	Gly				
				85					90					95					
Arg	Met	Tyr	Thr	Val	Lys	Val	Asn	Asp	Arg	Asn	Val	Glu	Ile	Thr					
			100					105				110							
Gln	Ala	Val	Pro	Glu	Tyr	Ala	Thr	Val	Gly	Ser	Pro	Tyr	Pro	Ile	Glu				
		115					120					125							
Ile	Thr	Ala	Thr	Gly	Lys	Arg	Asp	Cys	Val	Asp	Val	Ile	Ile	Thr	Gln				
	130					135					140								
Gln	Leu	Pro	Cys	Glu	Ala	Glu	Phe	Val	Arg	Ser	Asp	Pro	Ala	Thr	Thr				
	145				150					155					160				
Pro	Thr	Ala	Asp	Gly	Lys	Leu	Val	Trp	Lys	Ile	Asp	Arg	Leu	Gly	Gln				
				165					170					175					
Gly	Glu	Lys	Ser	Lys	Ile	Thr	Val	Trp	Val	Lys	Pro	Leu	Lys	Glu	Gly				
			180					185					190						
Cys	Cys	Phe	Thr	Ala	Ala	Thr	Val	Cys	Ala	Cys	Pro	Glu	Ile	Arg	Ser				
		195					200					205							
Val	Thr	Lys	Cys	Gly	Gln	Pro	Ala	Ile	Cys	Val	Lys	Gln	Glu	Gly	Pro				
	210					215					220								
Glu	Asn	Ala	Cys	Leu	Arg	Cys	Pro	Val	Val	Tyr	Lys	Ile	Asn	Ile	Val				
	225				230					235					240				
Asn	Gln	Gly	Thr	Ala	Thr	Ala	Arg	Asn	Val	Val	Val	Glu	Asn	Pro	Val				
				245					250					255					
Pro	Asp	Gly	Tyr	Ala	His	Ser	Ser	Gly	Gln	Arg	Val	Leu	Thr	Phe	Thr				
			260					265					270						
Leu	Gly	Asp	Met	Gln	Pro	Gly	Glu	His	Arg	Thr	Ile	Thr	Val	Glu	Phe				
		275					280					285							
Cys	Pro	Leu	Lys	Arg	Gly	Arg	Ala	Thr	Asn	Ile	Ala	Thr	Val	Ser	Tyr				
	290					295					300								
Cys	Gly	Gly	His	Lys	Asn	Thr	Ala	Ser	Val	Thr	Thr	Val	Ile	Asn	Glu				
	305				310					315					320				
Pro	Cys	Val	Gln	Val	Ser	Ile	Ala	Gly	Ala	Asp	Trp	Ser	Tyr	Val	Cys				
				325					330					335					
Lys	Pro	Val	Glu	Tyr	Val	Ile	Ser	Val	Ser	Asn	Pro	Gly	Asp	Leu	Val				

340 345 350
 Leu Arg Asp Val Val Val Glu Asp Thr Leu Ser Pro Gly Val Thr Val
 355 360 365
 Leu Glu Ala Ala Gly Ala Gln Ile Ser Cys Asn Lys Val Val Trp Thr
 370 375 380
 Val Lys Glu Leu Asn Pro Gly Glu Ser Leu Gln Tyr Lys Val Leu Val
 385 390 395 400
 Arg Ala Gln Thr Pro Gly Gln Phe Thr Asn Asn Val Val Val Lys Ser
 405 410 415
 Cys Ser Asp Cys Gly Thr Cys Thr Ser Cys Ala Glu Ala Thr Thr Tyr
 420 425 430
 Trp Lys Gly Val Ala Ala Thr His Met Cys Val Val Asp Thr Cys Asp
 435 440 445
 Pro Val Cys Val Gly Glu Asn Thr Val Tyr Arg Ile Cys Val Thr Asn
 450 455 460
 Arg Gly Ser Ala Glu Asp Thr Asn Val Ser Leu Met Leu Lys Phe Ser
 465 470 475 480
 Lys Glu Leu Gln Pro Val Ser Phe Ser Gly Pro Thr Lys Gly Thr Ile
 485 490 495
 Thr Gly Asn Thr Val Val Phe Asp Ser Leu Pro Arg Leu Gly Ser Lys
 500 505 510
 Glu Thr Val Glu Phe Ser Val Thr Leu Lys Ala Val Ser Ala Gly Asp
 515 520 525
 Ala Arg Gly Glu Ala Ile Leu Ser Ser Asp Thr Leu Thr Val Pro Val
 530 535 540
 Ser Asp Thr Glu Asn Thr His Ile Tyr
 545 550

<210> 442

<211> 192

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 442

Met Pro Glu Gly Glu Met Met His Lys Leu Gln Asp Val Ile Asp Arg
 5 10 15

Lys Leu Leu Asp Ser Arg Arg Ile Phe Phe Ser Glu Pro Val Thr Glu
 20 25 30

Lys Ser Ala Thr Glu Ala Ile Lys Lys Leu Trp Tyr Leu Glu Leu Thr
 35 40 45

Asn Pro Gly Gln Pro Ile Val Phe Val Ile Asn Ser Pro Gly Gly Ser
 50 55 60
 Val Asp Ala Gly Phe Ala Val Trp Asp Gln Ile Lys Met Ile Ser Ser
 65 70 75 80
 Pro Leu Thr Thr Val Val Thr Gly Leu Ala Ala Ser Met Gly Ser Val
 85 90 95
 Leu Ser Leu Cys Ala Val Pro Gly Arg Arg Phe Ala Thr Pro His Ala
 100 105 110
 Arg Ile Met Ile His Gln Pro Ser Ile Gly Gly Thr Ile Thr Gly Gln
 115 120 125
 Ala Thr Asp Leu Asp Ile His Ala Arg Glu Ile Leu Lys Thr Lys Ala
 130 135 140
 Arg Ile Ile Asp Val Tyr Val Glu Ala Thr Gly Gln Ser Arg Glu Val
 145 150 155 160
 Ile Glu Lys Ala Ile Asp Arg Asp Met Trp Met Ser Ala Asn Glu Ala
 165 170 175
 Met Glu Phe Gly Leu Leu Asp Gly Ile Leu Phe Ser Phe Asn Asp Leu
 180 185 190

<210> 443

<211> 275

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 443

Met Gly Phe Ser Ser Leu Leu Thr Thr Cys Arg Tyr Leu Leu Tyr Ser
 5 10 15

Gly Ala Gly Asn Ser Phe Ile Leu Gly Glu Ser Met Pro Ser Leu Glu
 20 25 30

Asp Val Leu Phe Leu Cys Gln Glu Glu Met Val Asp Gly Phe Leu Cys
 35 40 45

Val Glu Ser Ser Glu Ile Ala Asp Ala Lys Leu Thr Val Phe Asn Ser
 50 55 60

Asp Gly Ser Ile Ala Ser Met Cys Gly Asn Gly Leu Arg Cys Ala Met
 65 70 75 80

Ala His Val Ala Gln Cys Phe Gly Leu Glu Asp Val Ser Ile Glu Thr
 85 90 95

Glu Arg Gly Val Tyr Gln Gly Lys Phe Phe Ser Met Asn Arg Val Leu
 100 105 110

Val Asp Met Thr Leu Pro Asp Trp Lys Lys Ala Glu Arg Lys Leu Thr
 115 120 125

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<210> 444
<211> 1770
<212> PRT
<213> Chlamydia trachomatis serovar D

<400> 444
Met Lys Phe Met Ser Ala Thr Ala Val Phe Ala Ala Ala Leu Ser Ser
      5              10
Val Thr Glu Ala Ser Ser Ile Gln Asp Gln Ile Lys Asn Thr Asp Cys
      20              25              30
Asn Val Ser Lys Leu Gly Tyr Ser Thr Ser Gln Ala Phe Thr Asp Met
      35              40              45
Met Leu Ala Asp Asn Thr Glu Tyr Arg Ala Ala Asp Ser Val Ser Phe
      50              55              60
Tyr Asp Phe Ser Thr Ser Ser Arg Leu Pro Arg Lys His Leu Ser Ser
      65              70              75              80
Ser Ser Glu Ala Ser Pro Thr Thr Glu Gly Val Ser Ser Ser Ser Ser
      85              90              95
Gly Glu Thr Asp Glu Lys Thr Glu Glu Glu Leu Asp Asn Gly Gly Ile

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100								105				110					
Ile	Tyr	Ala	Arg	Glu	Lys	Leu	Thr	Ile	Ser	Glu	Ser	Gln	Asp	Ser	Leu		
		115					120					125					
Ser	Asn	Gln	Ser	Ile	Glu	Leu	His	Asp	Asn	Ser	Ile	Phe	Phe	Gly	Glu		
	130					135					140						
Gly	Glu	Val	Ile	Phe	Asp	His	Arg	Val	Ala	Leu	Lys	Asn	Gly	Gly	Ala		
145					150					155					160		
Ile	Tyr	Gly	Glu	Lys	Glu	Val	Val	Phe	Glu	Asn	Ile	Lys	Ser	Leu	Leu		
				165				170						175			
Val	Glu	Val	Asn	Ile	Ala	Val	Glu	Lys	Gly	Gly	Ser	Val	Tyr	Ala	Lys		
			180					185					190				
Glu	Arg	Val	Ser	Leu	Glu	Asn	Val	Thr	Glu	Ala	Thr	Phe	Ser	Ser	Asn		
		195					200										
Gly	Gly	Glu	Gln	Gly	Gly	Gly	Gly	Ile	Tyr	Ser	Glu	Gln	Asp	Met	Leu		
	210					215					220						
Ile	Ser	Asp	Cys	Asn	Asn	Val	His	Phe	Gln	Gly	Asn	Ala	Ala	Gly	Ala		
225					230					235					240		
Thr	Ala	Val	Lys	Gln	Cys	Leu	Asp	Glu	Glu	Met	Ile	Val	Leu	Leu	Ala		
				245					250					255			
Glu	Cys	Val	Asp	Ser	Leu	Ser	Glu	Asp	Thr	Leu	Asp	Ser	Thr	Pro	Glu		
			260					265						270			
Thr	Glu	Gln	Thr	Glu	Ser	Asn	Gly	Asn	Gln	Asp	Gly	Ser	Ser	Glu	Thr		
		275					280							285			
Glu	Asp	Thr	Gln	Val	Ser	Glu	Ser	Pro	Glu	Ser	Thr	Pro	Ser	Pro	Asp		
	290					295					300						
Asp	Val	Leu	Gly	Lys	Gly	Gly	Gly	Ile	Tyr	Thr	Glu	Lys	Ser	Leu	Thr		
305					310					315					320		
Ile	Thr	Gly	Ile	Thr	Gly	Thr	Ile	Asp	Phe	Val	Ser	Asn	Ile	Ala	Thr		
				325					330					335			
Asp	Ser	Gly	Ala	Gly	Val	Phe	Thr	Lys	Glu	Asn	Leu	Ser	Cys	Thr	Asn		
			340					345					350				
Thr	Asn	Ser	Leu	Gln	Phe	Leu	Lys	Asn	Ser	Ala	Gly	Gln	His	Gly	Gly		
		355					360						365				
Gly	Ala	Tyr	Val	Thr	Gln	Thr	Met	Ser	Val	Thr	Asn	Thr	Thr	Ser	Glu		
	370					375					380						
Ser	Ile	Thr	Thr	Pro	Pro	Leu	Ile	Gly	Glu	Val	Ile	Phe	Ser	Glu	Asn		
385					390					395					400		
Thr	Ala	Lys	Gly	His	Gly	Gly	Gly	Ile	Cys	Thr	Asn	Lys	Leu	Ser	Leu		

405								410					415				
Ser	Asn	Leu	Lys	Thr	Val	Thr	Leu	Thr	Lys	Asn	Ser	Ala	Lys	Glu	Ser		
			420						425					430			
Gly	Gly	Ala	Ile	Phe	Thr	Asp	Leu	Ala	Ser	Ile	Pro	Ile	Thr	Asp	Thr		
		435					440					445					
Pro	Glu	Ser	Ser	Thr	Pro	Ser	Ser	Ser	Ser	Pro	Ala	Ser	Thr	Pro	Glu		
	450					455					460						
Val	Val	Ala	Ser	Ala	Lys	Ile	Asn	Arg	Phe	Phe	Ala	Ser	Thr	Ala	Lys		
465					470				475					480			
Pro	Ala	Ala	Pro	Ser	Leu	Thr	Glu	Ala	Glu	Ser	Asp	Gln	Thr	Asp	Gln		
				485					490					495			
Thr	Glu	Thr	Ser	Asp	Thr	Asn	Ser	Asp	Ile	Asp	Val	Ser	Ile	Glu	Asn		
			500						505					510			
Ile	Leu	Asn	Val	Ala	Ile	Asn	Gln	Asn	Thr	Ser	Ala	Lys	Lys	Gly	Gly		
		515					520					525					
Ala	Ile	Tyr	Gly	Lys	Lys	Ala	Lys	Leu	Ser	Arg	Ile	Asn	Asn	Leu	Glu		
	530					535					540						
Leu	Ser	Gly	Asn	Ser	Ser	Gln	Asp	Val	Gly	Gly	Gly	Leu	Cys	Leu	Thr		
545					550					555					560		
Glu	Ser	Val	Glu	Phe	Asp	Ala	Ile	Gly	Ser	Leu	Leu	Ser	His	Tyr	Asn		
				565					570					575			
Ser	Ala	Ala	Lys	Glu	Gly	Gly	Ala	Ile	His	Ser	Lys	Thr	Val	Thr	Leu		
			580						585					590			
Ser	Asn	Leu	Lys	Ser	Thr	Phe	Thr	Phe	Ala	Asp	Asn	Thr	Val	Lys	Ala		
		595					600					605					
Ile	Val	Glu	Ser	Thr	Pro	Glu	Ala	Pro	Glu	Glu	Ile	Pro	Pro	Val	Glu		
	610					615					620						
Gly	Glu	Glu	Ser	Thr	Ala	Thr	Glu	Asp	Pro	Asn	Ser	Asn	Thr	Glu	Gly		
625					630					635				640			
Ser	Ser	Ala	Asn	Thr	Asn	Leu	Glu	Gly	Ser	Gln	Gly	Asp	Thr	Ala	Asp		
				645					650					655			
Thr	Gly	Thr	Gly	Asp	Val	Asn	Asn	Glu	Ser	Gln	Asp	Thr	Ser	Asp	Thr		
			660						665					670			
Gly	Asn	Ala	Glu	Ser	Glu	Glu	Gln	Leu	Gln	Asp	Ser	Thr	Gln	Ser	Asn		
		675					680					685					
Glu	Glu	Asn	Thr	Leu	Pro	Asn	Ser	Asn	Ile	Asp	Gln	Ser	Asn	Glu	Asn		
	690					695					700						
Thr	Asp	Glu	Ser	Ser	Asp	Ser	His	Thr	Glu	Glu	Ile	Thr	Asp	Glu	Ser		

705		710		715		720
Val Ser Ser Ser Ser 725 Glu Ser Gly Ser Ser 730 Thr Pro Gln Asp Gly Gly 735						
Ala Ala Ser Ser Gly 740 Ala Pro Ser Gly 745 Asp Gln Ser Ile Ser Ala Asn 750						
Ala Cys Leu 755 Ala Lys Ser Tyr Ala 760 Ala Ser Thr Asp Ser 765 Ser Ser Pro Val						
Ser Asn 770 Ser Ser Gly Ser 775 Glu Glu Pro Val Thr 780 Ser Ser Ser Asp Ser						
Asp 785 Val Thr Ala Ser 790 Ser Asp Asn Pro Asp Ser 795 Ser Ser Ser Gly Asp 800						
Ser Ala Gly Asp Ser 805 Glu Glu Pro Thr 810 Glu Pro Glu Ala Gly Ser Thr 815						
Thr Glu Thr 820 Leu Thr Leu Ile Gly 825 Gly Ala Ile Tyr Gly 830 Glu Thr						
Val Lys Ile 835 Glu Asn Phe Ser Gly 840 Gln Gly Ile Phe Ser 845 Gly Asn Lys						
Ala Ile Asp Asn Thr 850 Thr Glu Gly Ser Ser Ser 860 Lys Ser Asp Val Leu						
Gly 865 Gly Ala Val Tyr 870 Ala Lys Thr Leu Phe 875 Asn Leu Asp Ser Gly Ser 880						
Ser Arg Arg Thr 885 Val Thr Phe Ser Gly 890 Asn Thr Val Ser Ser 895 Gln Ser						
Thr Thr Gly 900 Gln Val Ala Gly Gly 905 Ala Ile Tyr Ser Pro 910 Thr Val Thr						
Ile Ala Thr 915 Pro Val Val Phe Ser 920 Lys Asn Ser Ala Thr 925 Asn Asn Ala						
Asn Asn Thr 930 Thr Asp Thr 935 Gln Arg Lys Asp Thr 940 Phe Gly Gly Ala Ile						
Gly 945 Ala Thr Ser Ala 950 Val Ser Leu Ser Gly 955 Ala His Phe Leu Glu 960						
Asn Val Ala Asp 965 Leu Gly Ser Ala Ile Gly 970 Leu Val Pro Gly 975 Thr Gln						
Asn Thr Glu 980 Thr Val Lys Leu Glu 985 Ser Gly Ser Tyr Tyr 990 Phe Glu Lys						
Asn Lys Ala 995 Leu Lys Arg Ala 1000 Thr Ile Tyr Ala Pro 1005 Val Val Ser Ile						
Lys Ala Tyr Thr Ala Thr Phe Asn Gln Asn Arg Ser Leu Glu Glu Gly						

1010	1015	1020
Ser Ala Ile Tyr Phe Thr Lys Glu Ala Ser Ile Glu Ser Leu Gly Ser		
1025	1030	1035 1040
Val Leu Phe Thr Gly Asn Leu Val Thr Leu Thr Leu Ser Thr Thr Thr		
	1045	1050 1055
Glu Gly Thr Pro Ala Thr Thr Ser Gly Asp Val Thr Lys Tyr Gly Ala		
	1060	1065 1070
Ala Ile Phe Gly Gln Ile Ala Ser Ser Asn Gly Ser Gln Thr Asp Asn		
	1075	1080 1085
Leu Pro Leu Lys Leu Ile Ala Ser Gly Gly Asn Ile Cys Phe Arg Asn		
	1090	1095 1100
Asn Glu Tyr Arg Pro Thr Ser Ser Asp Thr Gly Thr Ser Thr Phe Cys		
	1105	1110 1115 1120
Ser Ile Ala Gly Asp Val Lys Leu Thr Met Gln Ala Ala Lys Gly Lys		
	1125	1130 1135
Thr Ile Ser Phe Phe Asp Ala Ile Arg Thr Ser Thr Lys Lys Thr Gly		
	1140	1145 1150
Thr Gln Ala Thr Ala Tyr Asp Thr Leu Asp Ile Asn Lys Ser Glu Asp		
	1155	1160 1165
Ser Glu Thr Val Asn Ser Ala Phe Thr Gly Thr Ile Leu Phe Ser Ser		
	1170	1175 1180
Glu Leu His Glu Asn Lys Ser Tyr Ile Pro Gln Asn Val Val Leu His		
	1185	1190 1195 1200
Ser Gly Ser Leu Val Leu Lys Pro Asn Thr Glu Leu His Val Ile Ser		
	1205	1210 1215
Phe Glu Gln Lys Glu Gly Ser Ser Leu Val Met Thr Pro Gly Ser Val		
	1220	1225 1230
Leu Ser Asn Gln Thr Val Ala Asp Gly Ala Leu Val Ile Asn Asn Met		
	1235	1240 1245
Thr Ile Asp Leu Ser Ser Val Glu Lys Asn Gly Ile Ala Glu Gly Asn		
	1250	1255 1260
Ile Phe Thr Pro Pro Glu Leu Arg Ile Ile Asp Thr Thr Thr Gly Gly		
	1265	1270 1275 1280
Ser Gly Gly Thr Pro Ser Thr Asp Ser Glu Ser Asn Gln Asn Ser Asp		
	1285	1290 1295
Asp Thr Glu Glu Gln Asn Asn Asn Asp Ala Ser Asn Gln Gly Glu Ser		
	1300	1305 1310
Ala Asn Gly Ser Ser Ser Pro Ala Val Ala Ala Ala His Thr Ser Arg		

1315 1320 1325
 Thr Arg Asn Phe Ala Ala Ala Ala Thr Ala Thr Pro Thr Thr Thr Pro
 1330 1335 1340
 Thr Ala Thr Thr Thr Thr Ser Asn Gln Val Ile Leu Gly Gly Glu Ile
 1345 1350 1355 1360
 Lys Leu Ile Asp Pro Asn Gly Thr Phe Phe Gln Asn Pro Ala Leu Arg
 1365 1370 1375
 Ser Asp Gln Gln Ile Ser Leu Leu Val Leu Pro Thr Asp Ser Ser Lys
 1380 1385 1390
 Met Gln Ala Gln Lys Ile Val Leu Thr Gly Asp Ile Ala Pro Gln Lys
 1395 1400 1405
 Gly Tyr Thr Gly Thr Leu Thr Leu Asp Pro Asp Gln Leu Gln Asn Gly
 1410 1415 1420
 Thr Ile Ser Val Leu Trp Lys Phe Asp Ser Tyr Arg Gln Trp Ala Tyr
 1425 1430 1435 1440
 Val Pro Arg Asp Asn His Phe Tyr Ala Asn Ser Ile Leu Gly Ser Gln
 1445 1450 1455
 Met Leu Met Val Thr Val Lys Gln Gly Leu Leu Asn Asp Lys Met Asn
 1460 1465 1470
 Leu Ala Arg Phe Glu Glu Val Ser Tyr Asn Asn Leu Trp Ile Ser Gly
 1475 1480 1485
 Leu Gly Thr Met Leu Ser Gln Val Gly Thr Pro Thr Ser Glu Glu Phe
 1490 1495 1500
 Thr Tyr Tyr Ser Arg Gly Ala Ser Val Ala Leu Asp Ala Lys Pro Ala
 1505 1510 1515 1520
 His Asp Val Ile Val Gly Ala Ala Phe Ser Lys Met Ile Gly Lys Thr
 1525 1530 1535
 Lys Ser Leu Lys Arg Glu Asn Asn Tyr Thr His Lys Gly Ser Glu Tyr
 1540 1545 1550
 Ser Tyr Gln Ala Ser Val Tyr Gly Gly Lys Pro Phe His Phe Val Ile
 1555 1560 1565
 Asn Lys Lys Thr Glu Lys Ser Leu Pro Leu Leu Leu Gln Gly Val Ile
 1570 1575 1580
 Ser Tyr Gly Tyr Ile Lys His Asp Thr Val Thr His Tyr Pro Thr Ile
 1585 1590 1595 1600
 Arg Glu Arg Asn Lys Gly Glu Trp Glu Asp Leu Gly Trp Leu Thr Ala
 1605 1610 1615
 Leu Arg Val Ser Ser Val Leu Arg Thr Pro Ala Gln Gly Asp Thr Lys

1620 1625 1630
 Arg Ile Thr Val Tyr Gly Glu Leu Glu Tyr Ser Ser Ile Arg Gln Lys
 1635 1640 1645
 Gln Phe Thr Glu Thr Glu Tyr Asp Pro Arg Tyr Phe Asp Asn Cys Thr
 1650 1655 1660
 Tyr Arg Asn Leu Ala Ile Pro Met Gly Leu Ala Phe Glu Gly Glu Leu
 1665 1670 1675 1680
 Ser Gly Asn Asp Ile Leu Met Tyr Asn Arg Phe Ser Val Ala Tyr Met
 1685 1690 1695
 Leu Ser Ile Tyr Arg Asn Ser Pro Thr Cys Lys Tyr Gln Val Leu Ser
 1700 1705 1710
 Ser Gly Glu Gly Gly Glu Ile Ile Cys Gly Val Pro Thr Arg Asn Ser
 1715 1720 1725
 Ala Arg Gly Glu Tyr Ser Thr Gln Leu Tyr Leu Gly Pro Leu Trp Thr
 1730 1735 1740
 Leu Tyr Gly Ser Tyr Thr Ile Glu Ala Asp Ala His Thr Leu Ala His
 1745 1750 1755 1760
 Met Met Asn Cys Gly Ala Arg Met Thr Phe
 1765 1770

 <210> 445
 <211> 1751
 <212> PRT
 <213> Chlamydia trachomatis serovar D

 <400> 445
 Met Lys Trp Leu Ser Ala Thr Ala Val Phe Ala Ala Val Leu Pro Ser
 5 10 15
 Val Ser Gly Phe Cys Phe Pro Glu Pro Lys Glu Leu Asn Phe Ser Arg
 20 25 30
 Val Gly Thr Ser Ser Ser Thr Thr Phe Thr Glu Thr Val Gly Glu Ala
 35 40 45
 Gly Ala Glu Tyr Ile Val Ser Gly Asn Ala Ser Phe Thr Lys Phe Thr
 50 55 60
 Asn Ile Pro Thr Thr Asp Thr Thr Thr Pro Thr Asn Ser Asn Ser Ser
 65 70 75 80
 Ser Ser Asn Gly Glu Thr Ala Ser Val Ser Glu Asp Ser Asp Ser Thr
 85 90 95
 Thr Thr Thr Pro Asp Pro Lys Gly Gly Gly Ala Phe Tyr Asn Ala His
 100 105 110

Ser Gly Val Leu Ser Phe Met Thr Arg Ser Gly Thr Glu Gly Ser Leu
 115 120 125
 Thr Leu Ser Glu Ile Lys Ile Thr Gly Glu Gly Gly Ala Ile Phe Ser
 130 135 140
 Gln Gly Glu Leu Leu Phe Thr Asp Leu Thr Gly Leu Thr Ile Gln Asn
 145 150 155 160
 Asn Leu Ser Gln Leu Ser Gly Gly Ala Ile Phe Gly Glu Ser Thr Ile
 165 170 175
 Ser Leu Ser Gly Ile Thr Lys Ala Thr Phe Ser Ser Asn Ser Ala Glu
 180 185 190
 Val Pro Ala Pro Val Lys Lys Pro Thr Glu Pro Lys Ala Gln Thr Ala
 195 200 205
 Ser Glu Thr Ser Gly Ser Ser Ser Ser Ser Gly Asn Asp Ser Val Ser
 210 215 220
 Ser Pro Ser Ser Ser Arg Ala Glu Pro Ala Ala Ala Asn Leu Gln Ser
 225 230 235 240
 His Phe Ile Cys Ala Thr Ala Thr Pro Ala Ala Gln Thr Asp Thr Glu
 245 250 255
 Thr Ser Thr Pro Ser His Lys Pro Gly Ser Gly Gly Ala Ile Tyr Ala
 260 265 270
 Lys Gly Asp Leu Thr Ile Ala Asp Ser Gln Glu Val Leu Phe Ser Ile
 275 280 285
 Asn Lys Ala Thr Lys Asp Gly Gly Ala Ile Phe Ala Glu Lys Asp Val
 290 295 300
 Ser Phe Glu Asn Ile Thr Ser Leu Lys Val Gln Thr Asn Gly Ala Glu
 305 310 315 320
 Glu Lys Gly Gly Ala Ile Tyr Ala Lys Gly Asp Leu Ser Ile Gln Ser
 325 330 335
 Ser Lys Gln Ser Leu Phe Asn Ser Asn Tyr Ser Lys Gln Gly Gly Gly
 340 345 350
 Ala Leu Tyr Val Glu Gly Asp Ile Asn Phe Gln Asp Leu Glu Glu Ile
 355 360 365
 Arg Ile Lys Tyr Asn Lys Ala Gly Thr Phe Glu Thr Lys Lys Ile Thr
 370 375 380
 Leu Pro Lys Ala Gln Ala Ser Ala Gly Asn Ala Asp Ala Trp Ala Ser
 385 390 395 400
 Ser Ser Pro Gln Ser Gly Ser Gly Ala Thr Thr Val Ser Asn Ser Gly
 405 410 415

Asp Ser Ser Ser Gly Ser Asp Ser Asp Thr Ser Glu Thr Val Pro Ala
 420 425 430
 Thr Ala Lys Gly Gly Gly Leu Tyr Thr Asp Lys Asn Leu Ser Ile Thr
 435 440 445
 Asn Ile Thr Gly Ile Ile Glu Ile Ala Asn Asn Lys Ala Thr Asp Val
 450 455 460
 Gly Gly Gly Ala Tyr Val Lys Gly Thr Leu Thr Cys Glu Asn Ser His
 465 470 475 480
 Arg Leu Gln Phe Leu Lys Asn Ser Ser Asp Lys Gln Gly Gly Gly Ile
 485 490 495
 Tyr Gly Glu Asp Asn Ile Thr Leu Ser Asn Leu Thr Gly Lys Thr Leu
 500 505 510
 Phe Gln Glu Asn Thr Ala Lys Glu Glu Gly Gly Gly Leu Phe Ile Lys
 515 520 525
 Gly Thr Asp Lys Ala Leu Thr Met Thr Gly Leu Asp Ser Phe Cys Leu
 530 535 540
 Ile Asn Asn Thr Ser Glu Lys His Gly Gly Gly Ala Phe Val Thr Lys
 545 550 555 560
 Glu Ile Ser Gln Thr Tyr Thr Ser Asp Val Glu Thr Ile Pro Gly Ile
 565 570 575
 Thr Pro Val His Gly Glu Thr Val Ile Thr Gly Asn Lys Ser Thr Gly
 580 585 590
 Gly Asn Gly Gly Gly Val Cys Thr Lys Arg Leu Ala Leu Ser Asn Leu
 595 600 605
 Gln Ser Ile Ser Ile Ser Gly Asn Ser Ala Ala Glu Asn Gly Gly Gly
 610 615 620
 Ala His Thr Cys Pro Asp Ser Phe Pro Thr Ala Asp Thr Ala Glu Gln
 625 630 635 640
 Pro Ala Ala Ala Ser Ala Ala Thr Ser Thr Pro Glu Ser Ala Pro Val
 645 650 655
 Val Ser Thr Ala Leu Ser Thr Pro Ser Ser Ser Thr Val Ser Ser Leu
 660 665 670
 Thr Leu Leu Ala Ala Ser Ser Gln Ala Ser Pro Ala Thr Ser Asn Lys
 675 680 685
 Glu Thr Gln Asp Pro Asn Ala Asp Thr Asp Leu Leu Ile Asp Tyr Val
 690 695 700
 Val Asp Thr Thr Ile Ser Lys Asn Thr Ala Lys Lys Gly Gly Gly Ile
 705 710 715 720

Tyr Ala Lys Lys Ala Lys Met Ser Arg Ile Asp Gln Leu Asn Ile Ser
 725 730 735
 Glu Asn Ser Ala Thr Glu Ile Gly Gly Ile Cys Cys Lys Glu Ser
 740 745 750
 Leu Glu Leu Asp Ala Leu Val Ser Leu Ser Val Thr Glu Asn Leu Val
 755 760 765
 Gly Lys Glu Gly Gly Gly Leu His Ala Lys Thr Val Asn Ile Ser Asn
 770 775 780
 Leu Lys Ser Gly Phe Ser Phe Ser Asn Asn Lys Ala Asn Ser Ser Ser
 785 790 795 800
 Thr Gly Val Ala Thr Thr Ala Ser Ala Pro Ala Ala Ala Ala Ala Ser
 805 810 815
 Leu Gln Ala Ala Ala Ala Ala Val Pro Ser Ser Pro Ala Thr Pro Thr
 820 825 830
 Tyr Ser Gly Val Val Gly Gly Ala Ile Tyr Gly Glu Lys Val Thr Phe
 835 840 845
 Ser Gln Cys Ser Gly Thr Cys Gln Phe Ser Gly Asn Gln Ala Ile Asp
 850 855 860
 Asn Asn Pro Ser Gln Ser Ser Leu Asn Val Gln Gly Gly Ala Ile Tyr
 865 870 875 880
 Ala Lys Thr Ser Leu Ser Ile Gly Ser Ser Asp Ala Gly Thr Ser Tyr
 885 890 895
 Ile Phe Ser Gly Asn Ser Val Ser Thr Gly Lys Ser Gln Thr Thr Gly
 900 905 910
 Gln Ile Ala Gly Gly Ala Ile Tyr Ser Pro Thr Val Thr Leu Asn Cys
 915 920 925
 Pro Ala Thr Phe Ser Asn Asn Thr Ala Ser Met Ala Thr Pro Lys Thr
 930 935 940
 Ser Ser Glu Asp Gly Ser Ser Gly Asn Ser Ile Lys Asp Thr Ile Gly
 945 950 955 960
 Gly Ala Ile Ala Gly Thr Ala Ile Thr Leu Ser Gly Val Ser Arg Phe
 965 970 975
 Ser Gly Asn Thr Ala Asp Leu Gly Ala Ala Ile Gly Thr Leu Ala Asn
 980 985 990
 Ala Asn Thr Pro Ser Ala Thr Ser Gly Ser Gln Asn Ser Ile Thr Glu
 995 1000 1005
 Lys Ile Thr Leu Glu Asn Gly Ser Phe Ile Phe Glu Arg Asn Gln Ala
 1010 1015 1020

Asn Lys Arg Gly Ala Ile Tyr Ser Pro Ser Val Ser Ile Lys Gly Asn
 1025 1030 1035 1040
 Asn Ile Thr Phe Asn Gln Asn Thr Ser Thr His Asp Gly Ser Ala Ile
 1045 1050 1055
 Tyr Phe Thr Lys Asp Ala Thr Ile Glu Ser Leu Gly Ser Val Leu Phe
 1060 1065 1070
 Thr Gly Asn Asn Val Thr Ala Thr Gln Ala Ser Ser Ala Thr Ser Gly
 1075 1080 1085
 Gln Asn Thr Asn Thr Ala Asn Tyr Gly Ala Ala Ile Phe Gly Asp Pro
 1090 1095 1100
 Gly Thr Thr Gln Ser Ser Gln Thr Asp Ala Ile Leu Thr Leu Leu Ala
 1105 1110 1115 1120
 Ser Ser Gly Asn Ile Thr Phe Ser Asn Asn Ser Leu Gln Asn Asn Gln
 1125 1130 1135
 Gly Asp Thr Pro Ala Ser Lys Phe Cys Ser Ile Ala Gly Tyr Val Lys
 1140 1145 1150
 Leu Ser Leu Gln Ala Ala Lys Gly Lys Thr Ile Ser Phe Phe Asp Cys
 1155 1160 1165
 Val His Thr Ser Thr Lys Lys Ile Gly Ser Thr Gln Asn Val Tyr Glu
 1170 1175 1180
 Thr Leu Asp Ile Asn Lys Glu Glu Asn Ser Asn Pro Tyr Thr Gly Thr
 1185 1190 1195 1200
 Ile Val Phe Ser Ser Glu Leu His Glu Asn Lys Ser Tyr Ile Pro Gln
 1205 1210 1215
 Asn Ala Ile Leu His Asn Gly Thr Leu Val Leu Lys Glu Lys Thr Glu
 1220 1225 1230
 Leu His Val Val Ser Phe Glu Gln Lys Glu Gly Ser Lys Leu Ile Met
 1235 1240 1245
 Lys Pro Gly Ala Val Leu Ser Asn Gln Asn Ile Ala Asn Gly Ala Leu
 1250 1255 1260
 Val Ile Asn Gly Leu Thr Ile Asp Leu Ser Ser Met Gly Thr Pro Gln
 1265 1270 1275 1280
 Ala Gly Glu Ile Phe Ser Pro Pro Glu Leu Arg Ile Val Ala Thr Thr
 1285 1290 1295
 Ser Ser Ala Ser Gly Gly Ser Gly Val Ser Ser Ser Ile Pro Thr Asn
 1300 1305 1310
 Pro Lys Arg Ile Ser Ala Ala Ala Pro Ser Gly Ser Ala Ala Thr Thr
 1315 1320 1325

Pro Thr Met Ser Glu Asn Lys Val Phe Leu Thr Gly Asp Leu Thr Leu
 1330 1335 1340
 Ile Asp Pro Asn Gly Asn Phe Tyr Gln Asn Pro Met Leu Gly Ser Asp
 1345 1350 1355 1360
 Leu Asp Val Pro Leu Ile Lys Leu Pro Thr Asn Thr Ser Asp Val Gln
 1365 1370 1375
 Val Tyr Asp Leu Thr Leu Ser Gly Asp Leu Phe Pro Gln Lys Gly Tyr
 1380 1385 1390
 Met Gly Thr Trp Thr Leu Asp Ser Asn Pro Gln Thr Gly Lys Leu Gln
 1395 1400 1405
 Ala Arg Trp Thr Phe Asp Thr Tyr Arg Arg Trp Val Tyr Ile Pro Arg
 1410 1415 1420
 Asp Asn His Phe Tyr Ala Asn Ser Ile Leu Gly Ser Gln Asn Ser Met
 1425 1430 1435 1440
 Ile Val Val Lys Gln Gly Leu Ile Asn Asn Met Leu Asn Asn Ala Arg
 1445 1450 1455
 Phe Asp Asp Ile Ala Tyr Asn Asn Phe Trp Val Ser Gly Val Gly Thr
 1460 1465 1470
 Phe Leu Ala Gln Gln Gly Thr Pro Leu Ser Glu Glu Phe Ser Tyr Tyr
 1475 1480 1485
 Ser Arg Gly Thr Ser Val Ala Ile Asp Ala Lys Pro Arg Gln Asp Phe
 1490 1495 1500
 Ile Leu Gly Ala Ala Phe Ser Lys Met Val Gly Lys Thr Lys Ala Ile
 1505 1510 1515 1520
 Lys Lys Met His Asn Tyr Phe His Lys Gly Ser Glu Tyr Ser Tyr Gln
 1525 1530 1535
 Ala Ser Val Tyr Gly Gly Lys Phe Leu Tyr Phe Leu Leu Asn Lys Gln
 1540 1545 1550
 His Gly Trp Ala Leu Pro Phe Leu Ile Gln Gly Val Val Ser Tyr Gly
 1555 1560 1565
 His Ile Lys His Asp Thr Thr Thr Leu Tyr Pro Ser Ile His Glu Arg
 1570 1575 1580
 Asn Lys Gly Asp Trp Glu Asp Leu Gly Trp Leu Ala Asp Leu Arg Ile
 1585 1590 1595 1600
 Ser Met Asp Leu Lys Glu Pro Ser Lys Asp Ser Ser Lys Arg Ile Thr
 1605 1610 1615
 Val Tyr Gly Glu Leu Glu Tyr Ser Ser Ile Arg Gln Lys Gln Phe Thr
 1620 1625 1630

Glu Ile Asp Tyr Asp Pro Arg His Phe Asp Asp Cys Ala Tyr Arg Asn
1635 1640 1645

Leu Ser Leu Pro Val Gly Cys Ala Val Glu Gly Ala Ile Met Asn Cys
1650 1655 1660

Asn Ile Leu Met Tyr Asn Lys Leu Ala Leu Ala Tyr Met Pro Ser Ile
1665 1670 1675 1680

Tyr Arg Asn Asn Pro Val Cys Lys Tyr Arg Val Leu Ser Ser Asn Glu
1685 1690 1695

Ala Gly Gln Val Ile Cys Gly Val Pro Thr Arg Thr Ser Ala Arg Ala
1700 1705 1710

Glu Tyr Ser Thr Gln Leu Tyr Leu Gly Pro Phe Trp Thr Leu Tyr Gly
1715 1720 1725

Asn Tyr Thr Ile Asp Val Gly Met Tyr Thr Leu Ser Gln Met Thr Ser
1730 1735 1740

Cys Gly Ala Arg Met Ile Phe
1745 1750

<210> 446

<211> 660

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 446

Met Ser Glu Lys Arg Lys Ser Asn Lys Ile Ile Gly Ile Asp Leu Gly
5 10 15

Thr Thr Asn Ser Cys Val Ser Val Met Glu Gly Gly Gln Pro Lys Val
20 25 30

Ile Ala Ser Ser Glu Gly Thr Arg Thr Thr Pro Ser Ile Val Ala Phe
35 40 45

Lys Gly Gly Glu Thr Leu Val Gly Ile Pro Ala Lys Arg Gln Ala Val
50 55 60

Thr Asn Pro Glu Lys Thr Leu Ala Ser Thr Lys Arg Phe Ile Gly Arg
65 70 75 80

Lys Phe Ser Glu Val Glu Ser Glu Ile Lys Thr Val Pro Tyr Lys Val
85 90 95

Ala Pro Asn Ser Lys Gly Asp Ala Val Phe Asp Val Glu Gln Lys Leu
100 105 110

Tyr Thr Pro Glu Glu Ile Gly Ala Gln Ile Leu Met Lys Met Lys Glu
115 120 125

Thr Ala Glu Ala Tyr Leu Gly Glu Thr Val Thr Glu Ala Val Ile Thr
130 135 140

Val 145	Pro	Ala	Tyr	Phe	Asn 150	Asp	Ser	Gln	Arg	Ala 155	Ser	Thr	Lys	Asp	Ala 160
Gly	Arg	Ile	Ala	Gly 165	Leu	Asp	Val	Lys	Arg	Ile 170	Ile	Pro	Glu	Pro 175	Thr
Ala	Ala	Ala	Leu 180	Ala	Tyr	Gly	Ile	Asp 185	Lys	Glu	Gly	Asp	Lys 190	Lys	Ile
Ala	Val	Phe 195	Asp	Leu	Gly	Gly	Gly 200	Thr	Phe	Asp	Ile	Ser 205	Ile	Leu	Glu
Ile	Gly 210	Asp	Gly	Val	Phe	Glu 215	Val	Leu	Ser	Thr	Asn 220	Gly	Asp	Thr	His
Leu 225	Gly	Gly	Asp	Asp	Phe 230	Asp	Gly	Val	Ile	Ile 235	Asn	Trp	Met	Leu	Asp 240
Glu	Phe	Lys	Lys	Gln 245	Glu	Gly	Ile	Asp	Leu 250	Ser	Lys	Asp	Asn	Met 255	Ala
Leu	Gln	Arg	Leu 260	Lys	Asp	Ala	Ala	Glu 265	Lys	Ala	Lys	Ile	Glu 270	Leu	Ser
Gly	Val	Ser 275	Ser	Thr	Glu	Ile	Asn 280	Gln	Pro	Phe	Ile	Thr 285	Ile	Asp	Ala
Asn	Gly 290	Pro	Lys	His	Leu	Ala 295	Leu	Thr	Leu	Thr	Arg 300	Ala	Gln	Phe	Glu
His 305	Leu	Ala	Ser	Ser	Leu 310	Ile	Glu	Arg	Thr	Lys 315	Gln	Pro	Cys	Ala	Gln 320
Ala	Leu	Lys	Asp	Ala 325	Lys	Leu	Ser	Ala	Ser 330	Asp	Ile	Asp	Asp	Val 335	Leu
Leu	Val	Gly	Gly 340	Met	Ser	Arg	Met	Pro 345	Ala	Val	Gln	Ala	Val 350	Val	Lys
Glu	Ile	Phe 355	Gly	Lys	Glu	Pro	Asn 360	Lys	Gly	Val	Asn	Pro 365	Asp	Glu	Val
Val	Ala 370	Ile	Gly	Ala	Ala	Ile 375	Gln	Gly	Gly	Val	Leu 380	Gly	Gly	Glu	Val
Lys 385	Asp	Val	Leu	Leu	Leu 390	Asp	Val	Ile	Pro	Leu 395	Ser	Leu	Gly	Ile	Glu 400
Thr	Leu	Gly	Gly 405	Val	Met	Thr	Pro	Leu	Val 410	Glu	Arg	Asn	Thr	Thr 415	Ile
Pro	Thr	Gln	Lys 420	Lys	Gln	Ile	Phe	Ser 425	Thr	Ala	Ala	Asp	Asn 430	Gln	Pro
Ala	Val	Thr 435	Ile	Val	Val	Leu	Gln 440	Gly	Glu	Arg	Pro	Met 445	Ala	Lys	Asp

Asn Lys Glu Ile Gly Arg Phe Asp Leu Thr Asp Ile Pro Pro Ala Pro
450 455 460

Arg Gly His Pro Gln Ile Glu Val Thr Phe Asp Ile Asp Ala Asn Gly
465 470 475 480

Ile Leu His Val Ser Ala Lys Asp Ala Ala Ser Gly Arg Glu Gln Lys
485 490 495

Ile Arg Ile Glu Ala Ser Ser Gly Leu Lys Glu Asp Glu Ile Gln Gln
500 505 510

Met Ile Arg Asp Ala Glu Leu His Lys Glu Glu Asp Lys Gln Arg Lys
515 520 525

Glu Ala Ser Asp Val Lys Asn Glu Ala Asp Gly Met Ile Phe Arg Ala
530 535 540

Glu Lys Ala Val Lys Asp Tyr His Asp Lys Ile Pro Ala Glu Leu Val
545 550 555 560

Lys Glu Ile Glu Glu His Ile Glu Lys Val Arg Gln Ala Ile Lys Glu
565 570 575

Asp Ala Ser Thr Thr Ala Ile Lys Ala Ala Ser Asp Glu Leu Ser Thr
580 585 590

His Met Gln Lys Ile Gly Glu Ala Met Gln Ala Gln Ser Ala Ser Ala
595 600 605

Ala Ala Ser Ser Ala Ala Asn Ala Gln Gly Gly Pro Asn Ile Asn Ser
610 615 620

Glu Asp Leu Lys Lys His Ser Phe Ser Thr Arg Pro Pro Ala Gly Gly
625 630 635 640

Ser Ala Ser Ser Thr Asp Asn Ile Glu Asp Ala Asp Val Glu Ile Val
645 650 655

Asp Lys Pro Glu
660

<210> 447

<211> 326

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 447

Met Val Ser Gln Thr Val Ser Val Ala Val Thr Gly Gly Thr Gly Gln
5 10 15

Ile Ala Tyr Ser Phe Leu Phe Ser Leu Ala His Gly Asp Val Phe Gly
20 25 30

Leu Asp Cys Gly Ile Asp Leu Arg Ile Tyr Asp Ile Pro Gly Thr Glu

35					40					45					
Arg	Ala 50	Leu	Ser	Gly	Val	Arg 55	Met	Glu	Leu	Asp	Asp 60	Gly	Ala	Phe	Pro
Leu 65	Leu	Gln	Arg	Val	Gln 70	Val	Thr	Thr	Ser	Leu 75	His	Asp	Ala	Phe	Asp 80
Gly	Ile	Asp	Ala	Ala 85	Phe	Leu	Ile	Gly	Ser 90	Val	Pro	Arg	Gly	Pro 95	Gly
Met	Glu	Arg	Arg 100	Asp	Leu	Leu	Lys	Lys 105	Asn	Gly	Glu	Ile	Phe 110	Ala	Thr
Gln	Gly	Lys 115	Ala	Leu	Asn	Thr	Thr 120	Ala	Lys	Arg	Asp	Ala 125	Lys	Ile	Phe
Val	Val 130	Gly	Asn	Pro	Val	Asn 135	Thr	Asn	Cys	Trp	Ile 140	Ala	Met	Asn	His
Ala 145	Pro	Arg	Leu	Leu	Arg 150	Lys	Asn	Phe	His	Ala 155	Met	Leu	Arg	Leu	Asp 160
Gln	Asn	Arg	Met	His 165	Ser	Met	Leu	Ser	His 170	Arg	Ala	Glu	Val	Pro 175	Leu
Ser	Ala	Val	Ser 180	Gln	Val	Val	Val	Trp 185	Gly	Asn	His	Ser	Ala 190	Lys	Gln
Val	Pro	Asp 195	Phe	Thr	Gln	Ala	Leu 200	Ile	Asn	Asp	Arg	Pro 205	Ile	Ala	Glu
Thr	Ile 210	Ala	Asp	Arg	Asp	Trp 215	Leu	Glu	Asn	Ile	Met 220	Val	Pro	Ser	Val
Gln 225	Ser	Arg	Gly	Ser	Ala 230	Val	Ile	Glu	Ala	Arg 235	Gly	Lys	Ser	Ser	Ala 240
Ala	Ser	Ala	Ala	Arg 245	Ala	Leu	Ala	Glu	Ala 250	Ala	Arg	Ser	Ile	Tyr 255	Gln
Pro	Lys	Glu	Gly 260	Glu	Trp	Phe	Ser	Ser 265	Gly	Val	Cys	Ser	Asp 270	His	Asn
Pro	Tyr	Gly 275	Leu	Pro	Glu	Asp	Leu 280	Ile	Phe	Gly	Phe	Pro 285	Cys	Arg	Met
Leu	Ala 290	Thr	Gly	Glu	Tyr	Glu 295	Val	Ile	Pro	Arg	Leu 300	Pro	Trp	Asp	Ala
Phe 305	Ile	Arg	Gly	Lys	Met 310	Gln	Ile	Ser	Leu	Asp 315	Glu	Ile	Leu	Gln	Glu 320
Lys	Ala	Ser	Val	Ser 325	Leu										

<400> 448

Leu Ala Lys Ser Tyr Ser Leu Gly Glu Ala Ile Asp Ile Leu Lys Gln
20 25 30

Gly Ile Asp Pro Arg Lys Ser Asp Gln Gln Ile Arg Gly Ser Val Ser
50 55 60

Gly Asp Lys Ala Ala Glu Ala Ile Glu Ala Gly Ala Asp Phe Val Gly
85 90 95

Val Ala Val Ala Thr Pro Asp Met Met Arg Glu Val Gly Lys Leu Gly
115 120 125

Val	Thr	Thr	Asp	Val	Val	Lys	Thr	Val	Ala	Glu	Leu	Arg	Lys	Gly	Lys
145					150					155					160

Lys Leu Ser Phe Asp Ser Ala Gln Ile Lys Glu Asn Val Glu Ala Leu
180 185 190

Leu Val Asn Phe Thr Ile Ser Ser Thr Met Gly Pro Gly Val Thr Val
210 215 220

<210> 449

<212> PRT

<213> Chlamydia trachomatis serovar D

Met	Phe	Lys	Cys	Pro	Glu	Arg	Val	Ser	Ile	Lys	Lys	Lys	Glu	Asp	Ile	
				5					10					15		
Leu	Asp	Leu	Pro	Asn	Leu	Val	Glu	Val	Gln	Ile	Lys	Ser	Tyr	Lys	Gln	
				20					25					30		
Phe	Leu	Gln	Ile	Gly	Lys	Leu	Ala	Glu	Glu	Arg	Glu	Asn	Ile	Gly	Leu	
				35					40					45		
Glu	Glu	Val	Phe	Arg	Glu	Ile	Phe	Pro	Ile	Lys	Ser	Tyr	Asn	Glu	Ala	
				50					55					60		
Thr	Ile	Leu	Glu	Tyr	Leu	Ser	Tyr	Asn	Leu	Gly	Val	Pro	Lys	Tyr	Ser	
				65					70					75		
Pro	Glu	Glu	Cys	Ile	Arg	Arg	Gly	Ile	Thr	Tyr	Ser	Val	Thr	Leu	Lys	
				85					90					95		
Val	Arg	Phe	Arg	Leu	Thr	Asp	Glu	Thr	Gly	Ile	Lys	Glu	Glu	Glu	Val	
				100					105					110		
Tyr	Met	Gly	Thr	Ile	Pro	Ile	Met	Thr	Asp	Lys	Gly	Thr	Phe	Ile	Ile	
				115					120					125		
Asn	Gly	Ala	Glu	Arg	Val	Val	Val	Ser	Gln	Val	His	Arg	Ser	Pro	Gly	
				130					135					140		
Ile	Asn	Phe	Glu	Gln	Glu	Lys	His	Ser	Lys	Gly	Asn	Val	Leu	Phe	Ser	
				145					150					155		
Phe	Arg	Ile	Ile	Pro	Tyr	Arg	Gly	Ser	Trp	Leu	Glu	Ala	Val	Phe	Asp	
				165					170					175		
Ile	Asn	Asp	Leu	Ile	Tyr	Ile	His	Ile	Asp	Arg	Lys	Lys	Arg	Arg	Arg	
				180					185					190		
Lys	Ile	Leu	Ala	Met	Thr	Phe	Ile	Arg	Ala	Leu	Gly	Tyr	Ser	Thr	Asp	
				195					200					205		
Ala	Asp	Ile	Ile	Glu	Glu	Phe	Phe	Ser	Val	Glu	Glu	Arg	Ser	Leu	Arg	
				210					215					220		
Leu	Glu	Lys	Asp	Phe	Val	Ala	Leu	Val	Gly	Lys	Val	Leu	Ala	Asp	Asn	
				225					230					235		
Val	Val	Asp	Ala	Asp	Ser	Ser	Leu	Val	Tyr	Gly	Lys	Ala	Gly	Glu	Lys	
				245					250					255		
Leu	Ser	Thr	Ala	Met	Leu	Lys	Arg	Ile	Leu	Asp	Ala	Gly	Val	Gln	Ser	
				260					265					270		
Leu	Lys	Ile	Ala	Val	Gly	Ala	Asp	Glu	Asn	His	Pro	Ile	Ile	Lys	Met	
				275					280					285		
Leu	Ala	Lys	Asp	Pro	Thr	Asp	Ser	Tyr	Glu	Ala	Ala	Leu	Lys	Asp	Phe	
				290					295					300		

Tyr Arg Arg Leu Arg Pro Gly Glu Pro Ala Thr Leu Val Asn Ala Arg
 305 310 315 320
 Ser Thr Ile Met Arg Leu Phe Phe Asp Ala Lys Arg Tyr Asn Leu Gly
 325 330 335
 Arg Val Gly Arg Tyr Lys Leu Asn Lys Lys Leu Gly Phe Pro Leu Asp
 340 345 350
 Asp Glu Thr Leu Ser Gln Val Thr Leu Arg Lys Glu Asp Val Ile Gly
 355 360 365
 Ala Leu Lys Tyr Leu Ile Arg Leu Arg Met Gly Asp Glu Lys Thr Ser
 370 375 380
 Ile Asp Asp Ile Asp His Leu Ala Asn Arg Arg Val Arg Ser Val Gly
 385 390 395 400
 Glu Leu Ile Gln Asn His Cys Arg Ser Gly Leu Ala Arg Met Glu Lys
 405 410 415
 Ile Val Arg Glu Arg Met Asn Leu Phe Asp Phe Ser Ser Asp Thr Leu
 420 425 430
 Thr Pro Gly Lys Ile Ile Ser Ala Lys Gly Leu Val Ser Val Leu Lys
 435 440 445
 Asp Phe Phe Ser Arg Ser Gln Leu Ser Gln Phe Met Asp Gln Thr Asn
 450 455 460
 Pro Val Ala Glu Leu Thr His Lys Arg Arg Leu Ser Ala Leu Gly Pro
 465 470 475 480
 Gly Gly Leu Asn Arg Glu Arg Ala Gly Phe Glu Val Arg Asp Val His
 485 490 495
 Ala Ser His Tyr Gly Arg Ile Cys Pro Ile Glu Thr Pro Glu Gly Pro
 500 505 510
 Asn Ile Gly Leu Ile Thr Ser Leu Ser Ser Phe Ala Lys Ile Asn Glu
 515 520 525
 Phe Gly Phe Ile Glu Thr Pro Tyr Arg Val Val Arg Asp Gly Ile Val
 530 535 540
 Thr Asp Glu Ile Glu Tyr Met Thr Ala Asp Val Glu Glu Glu Cys Val
 545 550 555 560
 Ile Ala Gln Ala Ser Ala Glu Leu Asp Glu Tyr Asp Met Phe Lys Thr
 565 570 575
 Pro Val Cys Trp Ala Arg Tyr Lys Gly Glu Ala Phe Glu Ala Asp Thr
 580 585 590
 Ser Thr Val Thr His Met Asp Val Ser Pro Lys Gln Leu Val Ser Val
 595 600 605

Val Thr Gly Leu Ile Pro Phe Leu Glu His Asp Asp Ala Asn Arg Ala
 610 615 620
 Leu Met Gly Ser Asn Met Gln Arg Gln Ala Val Pro Leu Leu Lys Thr
 625 630 635 640
 Glu Ala Ala Ile Val Gly Thr Gly Leu Glu Gly Arg Ala Ala Lys Asp
 645 650 655
 Ser Gly Ala Ile Ile Val Ala Gln Glu Asp Gly Val Val Glu Tyr Val
 660 665 670
 Asp Ser Tyr Glu Ile Val Val Ala Lys Lys Asn Asn Pro Thr Leu Lys
 675 680 685
 Asp Arg Tyr Gln Leu Lys Lys Phe Leu Arg Ser Asn Ser Gly Thr Cys
 690 695 700
 Ile Asn Gln Thr Pro Leu Cys Ser Val Gly Asp Val Val Thr His Gly
 705 710 715 720
 Asp Val Leu Ala Asp Gly Pro Ala Thr Asp Lys Gly Glu Leu Ala Leu
 725 730 735
 Gly Lys Asn Val Leu Val Ala Phe Met Pro Trp Tyr Gly Tyr Asn Phe
 740 745 750
 Glu Asp Ala Ile Ile Ile Ser Glu Arg Leu Ile Lys Gln Asp Ala Tyr
 755 760 765
 Thr Ser Ile Tyr Ile Glu Glu Phe Glu Leu Thr Ala Arg Asp Thr Lys
 770 775 780
 Leu Gly Lys Glu Glu Ile Thr Arg Asp Ile Pro Asn Val Ser Glu Glu
 785 790 795 800
 Val Leu Ala Asn Leu Gly Glu Asp Gly Val Val Arg Ile Gly Ala Glu
 805 810 815
 Val Lys Pro Gly Asp Ile Leu Val Gly Lys Ile Thr Pro Lys Ser Glu
 820 825 830
 Thr Glu Leu Ala Pro Glu Glu Arg Leu Leu Arg Ala Ile Phe Gly Glu
 835 840 845
 Lys Ala Ala Asp Val Lys Asp Ala Ser Leu Thr Val Pro Pro Gly Thr
 850 855 860
 Glu Gly Val Val Met Asp Val Lys Val Phe Ser Arg Lys Asp Arg Leu
 865 870 875 880
 Ser Lys Ser Asp Asp Glu Leu Val Glu Glu Ala Val His Leu Lys Asp
 885 890 895
 Leu Gln Lys Glu Tyr Lys Ser Gln Leu Ala Gln Leu Lys Val Glu His
 900 905 910

Arg	Glu	Lys	Leu	Gly	Ala	Leu	Leu	Leu	Asn	Glu	Lys	Ala	Pro	Ala	Ala	915	920	925
Ile	Ile	His	Arg	Arg	Ser	Ala	Asp	Ile	Leu	Val	Gln	Glu	Gly	Ala	Ile	930	935	940
Phe	Asp	Gln	Glu	Thr	Ile	Glu	Leu	Leu	Glu	Arg	Glu	Ser	Leu	Val	Asp	945	950	955
Leu	Leu	Met	Ala	Pro	Cys	Asp	Met	Tyr	Asp	Val	Leu	Lys	Asp	Ile	Leu	965	970	975
Ser	Ser	Tyr	Glu	Thr	Ala	Val	Gln	Arg	Leu	Glu	Val	Asn	Tyr	Lys	Thr	980	985	990
Glu	Ala	Glu	His	Ile	Lys	Glu	Gly	Asp	Ala	Asp	Leu	Asp	His	Gly	Val	995	1000	1005
Ile	Arg	Gln	Val	Lys	Val	Tyr	Val	Ala	Ser	Lys	Arg	Lys	Leu	Gln	Val	1010	1015	1020
Gly	Asp	Lys	Met	Ala	Gly	Arg	His	Gly	Asn	Lys	Gly	Val	Val	Ser	Lys	1025	1030	1035
Ile	Val	Pro	Glu	Ala	Asp	Met	Pro	Phe	Leu	Ala	Asn	Gly	Glu	Thr	Val	1045	1050	1055
Gln	Met	Ile	Leu	Asn	Pro	Leu	Gly	Val	Pro	Ser	Arg	Met	Asn	Leu	Gly	1060	1065	1070
Gln	Val	Leu	Glu	Thr	His	Leu	Gly	Tyr	Ala	Ala	Lys	Thr	Ala	Gly	Ile	1075	1080	1085
Tyr	Val	Lys	Thr	Pro	Val	Phe	Glu	Gly	Phe	Pro	Glu	Ser	Arg	Ile	Trp	1090	1095	1100
Asp	Met	Met	Ile	Glu	Gln	Gly	Leu	Pro	Glu	Asp	Gly	Lys	Ser	Tyr	Leu	1105	1110	1115
Phe	Asp	Gly	Lys	Thr	Gly	Glu	Arg	Phe	Asp	Ser	Lys	Val	Val	Val	Gly	1125	1130	1135
Tyr	Ile	Tyr	Met	Leu	Lys	Leu	Ser	His	Leu	Ile	Ala	Asp	Lys	Ile	His	1140	1145	1150
Ala	Arg	Ser	Ile	Gly	Pro	Tyr	Ser	Leu	Val	Thr	Gln	Gln	Pro	Leu	Gly	1155	1160	1165
Gly	Lys	Ala	Gln	Met	Gly	Gly	Gln	Arg	Phe	Gly	Glu	Met	Glu	Val	Trp	1170	1175	1180
Ala	Leu	Glu	Ala	Tyr	Gly	Val	Ala	His	Met	Leu	Gln	Glu	Ile	Leu	Thr	1185	1190	1195
Val	Lys	Ser	Asp	Asp	Val	Ser	Gly	Arg	Thr	Arg	Ile	Tyr	Glu	Ser	Ile	1205	1210	1215

Glu Ala Gly Arg Arg Trp Gly Val Arg Val Asn Thr Ile Ser Ala Gly

210 215 220
 Pro Leu Ala Ser Arg Ala Gly Lys Ala Ile Gly Phe Ile Glu Arg Met
 225 230 235 240
 Val Asp Tyr Tyr Gln Asp Trp Ala Pro Leu Pro Ser Pro Met Glu Ala
 245 250 255
 Glu Gln Val Gly Ala Ala Ala Ala Phe Leu Val Ser Pro Leu Ala Ser
 260 265 270
 Ala Ile Thr Gly Glu Thr Leu Tyr Val Asp His Gly Ala Asn Val Met
 275 280 285
 Gly Ile Gly Pro Glu Met Phe Pro Lys Asp
 290 295

<210> 451

<211> 298

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 451

Met Ser Leu Gln Lys Leu Leu Val Thr Asp Ile Asp Gly Thr Ile Thr
 5 10 15
 His Gln Ser His Leu Leu His Asp Arg Val Val Lys Ala Leu His Gln
 20 25 30
 Tyr Tyr Asp Ser Gly Trp Gln Leu Phe Phe Leu Thr Gly Arg Tyr Phe
 35 40 45
 Ser Tyr Ala Tyr Pro Leu Phe Gln Asn Phe Ser Val Pro Phe Leu Leu
 50 55 60
 Gly Ser Gln Asn Gly Ser Ser Val Trp Ser Ser Thr Asp Lys Glu Phe
 65 70 75 80
 Ile Tyr Phe Arg Ser Leu Ser Arg Asp Phe Leu Tyr Val Leu Glu Lys
 85 90 95
 Tyr Phe Glu Asp Leu Asp Leu Ile Ala Cys Ile Glu Ser Gly Ala Ser
 100 105 110
 Asn Arg Asp Val Tyr Phe Arg Lys Gly Leu Gly Lys Thr Ser Gln Glu
 115 120 125
 Leu Lys Ala Ile Leu Asp Ala Val Tyr Phe Pro Thr Pro Glu Ala Ala
 130 135 140
 Arg Leu Leu Val Asp Val Gln Gly His Leu Ser Glu Glu Phe Ser Tyr
 145 150 155 160
 Glu Asp Phe Ala Ile Ala Lys Phe Phe Gly Glu Arg Glu Glu Val Lys
 165 170 175

Lys Ile Met Asp Arg Phe Ile Gln Ser Pro Glu Val Ser Ser Gln Val
180 185 190

Thr Met Asn Tyr Met Arg Trp Pro Phe Asp Phe Lys Tyr Ala Val Leu
195 200 205

Leu Leu Thr Leu Lys Asp Val Ser Lys Gly Phe Ala Val Asp Gln Val
210 215 220

Val Gln Thr Phe Tyr Lys Glu Asn Lys Pro Phe Ile Met Ala Ser Gly
225 230 235 240

Asp Asp Ala Asn Asp Ile Asp Leu Leu Ser Arg Gly Asp Phe Lys Ile
245 250 255

Val Ile Gln Thr Ala Pro Glu Glu Met His Gly Leu Ala Asp Phe Leu
260 265 270

Ala Pro Pro Ala Lys Asp Phe Gly Ile Leu Ser Ala Trp Glu Ala Gly
275 280 285

Glu Leu Arg Tyr Lys Gln Leu Val Asn Pro
290 295

<210> 452

<211> 153

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 452

Met Leu Arg Leu Phe Gln His Ile Leu Cys Phe Leu Glu Glu Asp Pro
5 10 15

Ser Phe Val Asp Val Pro Gln Glu Leu Ser Phe Val Asn Glu Ala Phe
20 25 30

Ser Gly Ser Met Arg Trp Glu Val Gly Arg Met Leu Gly Ser Leu Leu
35 40 45

Leu Leu Leu Gly Ile Phe Gly Gly Gly Cys Leu Leu Phe Arg Arg Phe
50 55 60

Leu Arg Ser Arg Gly His Leu Pro Ser Gly Asn Ser Ser Ile Lys Ile
65 70 75 80

Leu Asp Gln Arg Val Leu Ala Ser Lys Thr Ser Ile Tyr Val Ile Lys
85 90 95

Val Ala Asn Lys Thr Leu Val Val Ala Glu Arg Gly Glu Arg Val Thr
100 105 110

Leu Leu Ser Glu Phe Pro Pro Asn Thr Asp Leu Asn Glu Leu Ile Gln
115 120 125

Lys Asp Gln Lys Lys Pro Ser Thr Pro Arg Gly Glu Met Leu Ser Gly
130 135 140

Phe Leu Lys Gln Phe Lys Glu Lys Lys
145 150

<210> 453

<211> 569

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 453

Met Pro Lys Gln Ala Asp Tyr Thr Trp Gly Ala Lys Lys Asn Leu Asp
5 10 15

Thr Ile Ala Cys Leu Pro Glu Asp Val Lys Gln Phe Lys Asp Leu Leu
20 25 30

Tyr Ala Met Tyr Gly Phe Thr Ala Thr Glu Glu Glu Pro Thr Ser Glu
35 40 45

Val His Pro Gly Ala Ile Leu Lys Gly Thr Val Val Asp Ile Ser Lys
50 55 60

Asp Phe Val Val Val Asp Val Gly Leu Lys Ser Glu Gly Val Ile Pro
65 70 75 80

Met Ser Glu Phe Ile Asp Ser Ser Glu Gly Leu Thr Val Gly Ala Glu
85 90 95

Val Glu Val Tyr Leu Asp Gln Thr Glu Asp Asp Glu Gly Lys Val Val
100 105 110

Leu Ser Arg Glu Lys Ala Thr Arg Gln Arg Gln Trp Glu Tyr Ile Leu
115 120 125

Ala His Cys Glu Glu Gly Ser Ile Val Lys Gly Gln Ile Thr Arg Lys
130 135 140

Val Lys Gly Gly Leu Ile Val Asp Ile Gly Met Glu Ala Phe Leu Pro
145 150 155 160

Gly Ser Gln Ile Asp Asn Lys Lys Ile Lys Asn Leu Asp Asp Tyr Val
165 170 175

Gly Lys Val Cys Glu Phe Lys Ile Leu Lys Ile Asn Val Asp Arg Arg
180 185 190

Asn Val Val Val Ser Arg Arg Glu Leu Leu Glu Ala Glu Arg Ile Ser
195 200 205

Lys Lys Ala Glu Leu Ile Glu Gln Ile Thr Ile Gly Glu Arg Arg Lys
210 215 220

Gly Ile Val Lys Asn Ile Thr Asp Phe Gly Val Phe Leu Asp Leu Asp
225 230 235 240

Gly Ile Asp Gly Leu Leu His Ile Thr Asp Met Thr Trp Lys Arg Ile

	245		250		255
Arg His Pro Ser Glu Met Val Glu Leu Asn Gln Glu Leu Glu Val Ile	260		265		270
Ile Leu Ser Val Asp Lys Glu Lys Gly Arg Val Ala Leu Gly Leu Lys	275		280		285
Gln Lys Glu His Asn Pro Trp Glu Asp Ile Glu Lys Lys Tyr Pro Pro	290		295		300
Gly Lys Arg Val Arg Gly Lys Ile Val Lys Leu Leu Pro Tyr Gly Ala	305		310		315
Phe Ile Glu Ile Glu Glu Gly Ile Glu Gly Leu Ile His Val Ser Glu	325		330		335
Met Ser Trp Val Lys Asn Ile Val Asp Pro Asn Glu Val Val Asn Lys	340		345		350
Gly Asp Glu Val Glu Val Val Val Leu Ser Ile Gln Lys Asp Glu Gly	355		360		365
Lys Ile Ser Leu Gly Leu Lys Gln Thr Lys His Asn Pro Trp Asp Asn	370		375		380
Ile Glu Glu Lys Tyr Pro Ile Gly Leu Arg Val Thr Ala Glu Ile Lys	385		390		395
Asn Leu Thr Asn Tyr Gly Ala Phe Val Glu Leu Glu Pro Gly Ile Glu	405		410		415
Gly Leu Ile His Ile Ser Asp Met Ser Trp Ile Lys Lys Val Ser His	420		425		430
Pro Ser Glu Leu Phe Lys Lys Gly Asn Thr Val Glu Ala Val Ile Leu	435		440		445
Ser Val Asp Lys Glu Ser Lys Lys Ile Thr Leu Gly Val Lys Gln Leu	450		455		460
Thr Pro Asn Pro Trp Asp Glu Ile Glu Val Met Phe Pro Val Gly Ser	465		470		475
Asp Ile Ser Gly Val Val Thr Lys Ile Thr Ala Phe Gly Ala Phe Val	485		490		495
Glu Leu Gln Asn Gly Ile Glu Gly Leu Ile His Val Ser Glu Leu Ser	500		505		510
Glu Lys Pro Phe Ala Lys Ile Glu Asp Val Leu Ser Ile Gly Asp Lys	515		520		525
Val Ser Ala Lys Val Ile Lys Leu Asp Pro Asp His Lys Lys Val Ser	530		535		540
Leu Ser Ile Lys Glu Phe Leu Val His Gly Gly Asp Ala Gly His Asp					

545 550 555 560

Ala Glu Glu Glu Ser Ser Asp Arg Asp
565

<210> 454
<211> 666
<212> PRT
<213> Chlamydia trachomatis serovar D

<400> 454

Met Glu Ser Leu Ser Val Arg Ser Thr Ile Pro Leu Pro Leu Gly Ala
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Lys Lys Leu Ser Ala Asp Arg Tyr Arg Phe Ser Leu Phe Ser Ser Gln
20 25 30

Ala Gln Gln Val Thr Leu Val Leu Leu Asp Pro Leu Ser Glu Ile His
35 40 45

Glu Ile Pro Leu Ser Ser Thr Asp His Arg Thr Gly Ala Ile Trp His
50 55 60

Ile Glu Ile Ala Gly Ile Ser Ser Glu Trp Ser Tyr Ala Tyr Lys Leu
65 70 75 80

Arg Gly Thr Asp Leu Ser Ser Gln Lys Phe Ala Thr Asp Ser Tyr Ile
85 90 95

Ala Asp Pro Tyr Ser Lys Asn Ile Tyr Ser Pro Gln Leu Phe Gly Ser
100 105 110

Pro Lys Gln Glu Lys Asp Tyr Ala Phe Ser Tyr Leu Lys His Glu Asp
115 120 125

Phe Asp Trp Glu Gly Asp Thr Pro Leu His Leu Pro Lys Glu Asn Tyr
130 135 140

Phe Ile Tyr Glu Met His Val Arg Ser Phe Thr Arg Asp Pro Ser Ser
145 150 155 160

Gln Val Ser His Pro Gly Thr Phe Leu Gly Ile Ile Glu Lys Ile Asp
165 170 175

His Leu Lys Gln Leu Gly Val His Ala Val Glu Leu Leu Pro Ile Phe
180 185 190

Glu Phe Asp Glu Thr Val His Pro Phe Lys Asn Gln Asp Phe Pro His
195 200 205

Leu Cys Asn Tyr Trp Gly Tyr Ser Ser Val Asn Phe Phe Cys Pro Ser
210 215 220

Arg Arg Tyr Thr Tyr Gly Ala Asp Pro Cys Ala Pro Ala Arg Glu Phe
225 230 235 240

Lys	Thr	Leu	Val	Lys	Ala	Leu	His	Arg	Ala	Gly	Ile	Glu	Val	Ile	Leu
				245					250					255	
Asp	Val	Val	Phe	Asn	His	Thr	Gly	Phe	Glu	Gly	Thr	Ser	Cys	Pro	Leu
			260					265					270		
Pro	Trp	Ile	Asp	Leu	Glu	Ser	Tyr	Tyr	Met	Val	Asn	Asp	His	Gly	Asp
		275					280					285			
Leu	Met	Asn	Phe	Ser	Gly	Cys	Gly	Asn	Thr	Val	Asn	Thr	Asn	Thr	Pro
	290					295					300				
Thr	Thr	Leu	Lys	Trp	Ile	Leu	Asp	Ala	Leu	Arg	Tyr	Trp	Val	Gln	Glu
305					310					315					320
Met	His	Val	Asp	Gly	Phe	Arg	Phe	Asp	Leu	Ala	Ser	Val	Phe	Ser	Arg
				325					330					335	
Asp	Pro	Gln	Gly	Val	Pro	Leu	Pro	Leu	Thr	Pro	Ile	Leu	Gln	Ala	Ile
			340					345					350		
Ser	Ser	Asp	Ser	Ile	Leu	Ser	Glu	Thr	Lys	Leu	Ile	Ala	Glu	Pro	Trp
		355					360					365			
Asp	Ala	Gly	Gly	Leu	Tyr	Gln	Leu	Gly	His	Phe	Pro	Ser	Ile	Ser	Thr
	370					375					380				
Arg	Trp	Ser	Glu	Trp	Asn	Gly	Cys	Tyr	Arg	Asp	His	Val	Lys	Ala	Phe
385					390					395					400
Leu	Asn	Gly	Asp	Ala	His	Gln	Val	Ser	Ser	Phe	Ala	Ser	Arg	Ile	Ser
				405					410					415	
Gly	Ser	His	Asp	Ile	Tyr	Pro	Asn	Gly	Lys	Pro	Thr	Asn	Ser	Ile	Asn
			420					425					430		
Tyr	Ile	Cys	Ser	His	Asp	Gly	Phe	Thr	Leu	Tyr	Asp	Thr	Val	Ala	Tyr
		435				440						445			
Asn	Asp	Lys	His	Asn	Glu	Glu	Asn	Gly	Glu	Tyr	Asn	Arg	Asp	Gly	Thr
	450					455					460				
Ser	Ala	Asn	Tyr	Ser	Tyr	Asn	Phe	Gly	Cys	Glu	Gly	Glu	Thr	Thr	Asp
465					470				475						480
Pro	Thr	Ile	Cys	Ala	Leu	Arg	Glu	Arg	Gln	Met	Lys	Asn	Phe	Phe	Leu
				485					490					495	
Ala	Leu	Phe	Leu	Ser	Gln	Gly	Ile	Pro	Met	Ile	Gln	Ser	Gly	Asp	Glu
			500					505					510		
Tyr	Gly	His	Thr	Ala	Tyr	Gly	Asn	Asn	Asn	His	Trp	Cys	Leu	Asp	Thr
		515				520						525			
Lys	Ile	Asn	Tyr	Phe	Leu	Trp	Asp	Arg	Leu	Ala	Glu	Arg	Lys	Glu	Leu
	530					535					540				

Phe Ser Phe Leu Cys Gln Val Ile Ala Leu Arg Lys Ala Tyr Thr Glu
545 550 555 560

Leu Phe Asn Thr Ser Phe Leu Ser Glu Asp Thr Ile Thr Trp Leu Asn
565 570 575

Thr Lys Gly Ser Pro Arg Glu Trp Gly Ala Asp His Tyr Leu Ala Phe
580 585 590

Glu Leu Lys His Leu Asn Tyr Ser Leu Phe Val Ala Phe Tyr Ser Gly
595 600 605

Asn Glu Arg Ile Glu Ile Ser Leu Pro Lys Pro Arg Lys Glu His Leu
610 615 620

Ala Tyr Glu Lys Ile Val Asp Ser Thr Thr Gly Phe Phe Ser Gln Ile
625 630 635 640

Leu Ser Pro Lys Leu Ser Leu Glu Pro Tyr Ser Ser Leu Val Ala Ile
645 650 655

Ser Arg Arg Lys Thr Ser Leu Glu Ser Arg
660 665

<210> 455

<211> 882

<212> DNA

<213> Chlamydia pneumoniae

<400> 455

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tctagcgtaa	agcaattttg	tccttatctc	ttactcacga	acttctctta	ctatatccaa	120
acctttgcaa	aacttcatgg	ggtgcccgtc	tttgagggtt	ctatgttttc	tgctgcccac	180
gctcctcatc	ttaaaacttc	aatttttagat	tttaaactag	ggtctccagg	agctgcatta	240
actatagact	tatgttcatt	tcttctctgat	ctcaaagcag	cgcttatgtt	aggaatgtgt	300
gggggcttac	gctctcatta	tcagggttga	gattactttg	tccccgtagc	tagcatacgt	360
ggagagggtg	cttcagacgc	ctatttccct	cctgaagttc	cggctcttgc	aaattttggt	420
gtacagaaag	caacaactga	agtttttagaa	gataagaagg	caaactacca	tattggcatt	480
acccacacga	ccaacattcg	cttttgggaa	tttaacaaaa	aatttagaaa	aaaactgtac	540
gaaaccaaag	ctcaatccgc	tgaaatggag	tgtgcgacac	tttttgctgc	cggataccgt	600
agaaacctgc	ccattggagc	gttattattg	atttcagatc	ttcccttaag	gaaggaggga	660
atcaaaacga	agtccagtgg	gaacttcata	tttaataact	atacggaaga	ccacatctta	720
acaggacaag	aagtcataga	gaaccttgaa	aaagtcatgc	taaaacgagc	agcttctgac	780
cataagaagg	atcaacagta	tcgaggatta	cctcatatgg	aagttggaga	agccgatgac	840
actatggcta	gcggctctga	aacttccgac	agtgactatt	ga		882

<210> 456

<211> 1185

<212> DNA

<213> Chlamydia pneumoniae

<400> 456

atgtcaaaag	aaacttttca	acgtaataag	ccccatatca	atattgggac	gatcgggcac	60
gttgaccatg	gtaaaactac	gctaacagcg	gcaattacac	gcgcgctatc	aggggatgga	120
ttggcctctt	tcogtgacta	tagttcaatt	gacaatactc	cagaagaaaa	ggctcgtgga	180
attactatca	acgcttctca	cgttgaatac	gaaaccccaa	atcgtcacta	cgctcacgta	240

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<210> 457
<211> 1656
<212> DNA
<213> Chlamydia pneumoniae
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<210> 458
<211> 294
<212> DNA
<213> Chlamydia pneumoniae
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[illegible]

aagcttgtgg	acgtgattcc	acaacaactc	ttcaagattc	ccatccaagc	tgccattaac	1620
aaaaaagtca	ttgccagaga	aacgattcgt	gcgctttcta	agaacgtgac	cgcaaagtgt	1680
tatggcggag	atattactag	gaaacgcaag	ctgtgggaaa	agcaaaagaa	aggaaaaaaa	1740
cgtatgaagg	aatttggaag	agtttccatt	cccaatacag	ctttcattga	agtttctaaa	1800
ttagattaa						1809

<210> 461

<211> 975

<212> DNA

<213> Chlamydia pneumoniae

<400> 461

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aaagaaaaaa	ataagaaaaa	ttctctctta	tcttcttcag	agattcagaa	attggaaaaa	120
cgtttagata	aattaaaaa	aaagatctat	tccgatttga	ctccttggga	gcgtgtacaa	180
atatgtcgcc	accottcgcg	tcccgtact	gtcaactata	ttgaagggat	gtgtgaggag	240
tttgtcgagc	tttgtggaga	tgcaccttc	cgagatgatc	ccgcagttgt	tggtggcttt	300
gtaaaaatcc	agggtcagcg	ttttgtcctt	attggccaag	aaaagggatg	cgatacagcg	360
tcacgccttc	ataggaactt	cggatatgtta	tgtcccagag	gtttcagaaa	agcccttcgc	420
ttaggaagac	tgcgtgaaaa	gtttggcttg	cctgtgtgtc	ttcttgcga	taccccagga	480
gcatatcctg	gattgactgc	tgaagagaga	ggacaaggat	gggcaattgc	caaaaatctt	540
tttgagctct	caagacttgc	cactcccggt	attattgtcg	ttatcgggtg	gggatgttca	600
ggtggagctt	tgggcatggc	tgtaggtgat	tctgtagcta	tgtagagca	ttcctattat	660
tctgtaattt	cccagaagag	atgcgcctcc	attctttgga	aagatcctaa	gaaaaatagc	720
gaagcagctt	ccatgttgaa	aatgcattga	gaaaacttaa	aacaatttgg	cattatcgat	780
actgttatca	aagagcccat	tgggggagct	caccacgatc	ctgcattggg	atatagcaat	840
gttcgagagt	ttatcatcca	agagtgggtt	cgattaaaag	atctagctat	agaagagctg	900
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<210> 462

<211> 1980

<212> DNA

<213> Chlamydia pneumoniae

<400> 462

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cttgtaaagg	tttcagaact	aagtcagaaa	gatatttttag	agaattggca	ggcaattagt	240
aaggattcag	agacacttac	agtctctgat	gccacgacat	acatcgccga	acatgggaaa	300
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cgcttttcgag	gactggcaat	cttcttaatc	tgcgttgcta	tttttaaagc	agtcacctta	420
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gactacttta	aggccctaca	acaactcccc	atgaccttct	tccatgatca	tgatatcggt	540
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atgattaact	acattcaagc	cccaattacc	ttcatattga	cattgggagt	ctgtctgtcg	660
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gaaaaatttg	ccttcacaaa	atattgtgag	cataacaata	agattttctgc	tttagaggag	900
aaaagtgtcg	cttacggttt	gcttccacga	ccctcctctgc	ataccatagc	ttctttattt	960
tttgcttttg	tgcgtgttat	cggaaatttat	aaatttgcga	ttcctcccga	agaacttatc	1020
gtattttgtg	gtttgtctta	cctaactctac	gaccctatta	agaagttcgg	ggatgaaaat	1080
acctccatca	tgaggggatg	tgcgtgtcgc	gagagatttt	atgaagtctt	gaatcacccc	1140
gactcttcata	gtcaaaaaga	aagagaaatc	gagttccttg	gactttctaa	tacaatcaca	1200
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<210> 463

<211> 1236

<212> DNA

<213> Chlamydia pneumoniae

<400> 463

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<210> 464

<211> 1215

<212> DNA

<213> Chlamydia pneumoniae

<400> 464

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<210> 465

<211> 1632

<212> DNA

<213> Chlamydia pneumoniae

<400> 465

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<211> 312

<212> DNA

<213> Chlamydia pneumoniae

<400> 466

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<210> 467

<211> 1089

<212> DNA

<213> Chlamydia pneumoniae

<400> 467

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<210> 468

<211> 1308

<212> DNA

<213> Chlamydia pneumoniae

<400> 468

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 <212> DNA
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 <213> Chlamydia pneumoniae

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<210> 471
 <211> 1083
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<213> Chlamydia pneumoniae

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<211> 1200

<212> DNA

<213> Chlamydia pneumoniae

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<210> 473

<211> 675

<212> DNA

<213> Chlamydia pneumoniae

<400> 473

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<210> 474

<211> 741

<212> DNA

<213> Chlamydia pneumoniae

<400> 474

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<211> 1062

<212> DNA

<213> Chlamydia pneumoniae

<400> 475

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<211> 1041

<212> DNA

<213> Chlamydia pneumoniae

<400> 478

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<211> 984

<212> DNA

<213> Chlamydia pneumoniae

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<211> 444
<212> DNA
<213> Chlamydia pneumoniae
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<210> 481
<211> 1581
<212> DNA
<213> Chlamydia pneumoniae
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<210> 482

<211> 1908

<212> DNA

<213> Chlamydia pneumoniae

<400> 482

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<211> 945

<212> DNA

<213> Chlamydia pneumoniae

<400> 483

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<210> 484

<211> 3723

<212> DNA

<213> Chlamydia pneumoniae

<400> 484

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Lys	Pro	Phe	Phe 325	Ser	Gly	Tyr	Arg	Pro	Gln 330	Phe	Phe	Arg	Thr 335	Thr	Thr	
Asp	Val	Thr	Gly	Val	Val	Thr	Leu	Pro	Glu	Gly	Thr	Glu	Met	Val	Met	

340 345 350
 Pro Gly Asp Asn Val Glu Leu Asp Val Glu Leu Ile Gly Thr Val Ala
 355 360 365
 Leu Glu Glu Gly Met Arg Phe Ala Ile Arg Glu Gly Gly Arg Thr Ile
 370 375 380
 Gly Ala Gly Thr Ile Ser Lys Ile Asn Ala
 385 390

<210> 492

<211> 560

<212> PRT

<213> Chlamydia pneumoniae

<220>

<221> VARIANT

<222> (1)...(560)

<223> Xaa = Any Amino Acid

<400> 492

Met Pro Gln Lys Val Leu Ile Thr Ser Ala Leu Pro Tyr Ala Asn Gly
 1 5 10 15
 Pro Leu His Phe Gly His Ile Ala Gly Val Tyr Leu Pro Ala Asp Val
 20 25 30
 Tyr Ala Arg Phe Arg Arg Leu Leu Gly Asp Asp Val Leu Tyr Ile Cys
 35 40 45
 Gly Ser Asp Glu Phe Gly Ile Ala Ile Thr Leu Asn Ala Asp Arg Glu
 50 55 60
 Gly Leu Gly Tyr Gln Glu Tyr Val Asp Met Tyr His Lys Leu His Lys
 65 70 75 80
 Asp Thr Phe Glu Lys Leu Gly Phe Ala Leu Asp Phe Phe Ser Arg Thr
 85 90 95
 Thr Asn Pro Phe His Ala Glu Leu Val Gln Asp Phe Tyr Ser Gln Leu
 100 105 110
 Lys Ala Ser Gly Leu Ile Glu Asn Arg Ile Ser Glu Gln Leu Tyr Ser
 115 120 125
 Glu Gln Glu Gln Arg Phe Leu Ala Asp Arg Tyr Val Glu Gly Thr Cys
 130 135 140
 Pro Arg Cys Gly Phe Asp His Ala Arg Gly Asp Glu Cys Gln Ser Cys
 145 150 155 160
 Gly Ala Asp Tyr Glu Ala Ile Asp Leu Ile Gly Pro Lys Ser Lys Ile
 165 170 175
 Ser Gly Val Glu Leu Val Lys Lys Glu Thr Glu His Ser Tyr Phe Leu
 180 185 190
 Leu Asp Arg Met Lys Asp Ala Leu Leu Ser Phe Ile Gln Gly Cys Tyr
 195 200 205
 Leu Pro Asp His Val Arg Lys Phe Val Val Asp Tyr Ile Glu His Val
 210 215 220
 Arg Ser Arg Ala Ile Thr Arg Asp Leu Ser Trp Gly Ile Pro Val Pro
 225 230 235 240
 Asp Phe Pro Gly Lys Val Phe Tyr Val Trp Phe Asp Ala Pro Ile Gly
 245 250 255
 Tyr Ile Ser Gly Thr Met Glu Trp Ala Ala Ser Gln Gly Asn Pro Asp
 260 265 270
 Glu Trp Lys Arg Phe Trp Leu Glu Asp Gly Val Glu Tyr Val Gln Phe
 275 280 285
 Ile Gly Lys Asp Asn Leu Pro Phe His Ser Val Val Phe Pro Ala Met
 290 295 300

Glu Leu Gly Gln Lys Leu Asp Tyr Lys Lys Val Asp Ala Leu Val Val
 305 310 315 320
 Ser Glu Phe Tyr Leu Leu Glu Gly Arg Gln Phe Ser Lys Ser Glu Gly
 325 330 335
 Asn Tyr Val Asp Met Asp Lys Phe Leu Ser Ser Tyr Ser Leu Asp Lys
 340 345 350
 Leu Arg Tyr Val Leu Ala Ala Thr Ala Pro Glu Thr Ser Asp Ser Glu
 355 360 365
 Phe Thr Phe Leu Asp Phe Lys Thr Arg Cys Asn Ser Glu Leu Val Gly
 370 375 380
 Lys Phe Gly Asn Phe Ile Asn Arg Val Leu Ala Phe Ala Glu Lys Asn
 385 390 395 400
 His Tyr Asp Lys Leu Ser Tyr His Ser Val Val Leu Glu Asp Ser Asp
 405 410 415
 Arg Ala Phe Leu Glu Glu Ala Arg Gln Leu Val Arg Asp Ala Glu Lys
 420 425 430
 Cys Tyr Arg Glu Tyr Ser Leu Arg Lys Ala Thr Ser Val Ile Met Ser
 435 440 445
 Leu Ala Ala Leu Gly Asn Val Tyr Phe Asn Gln Gln Ala Pro Trp Lys
 450 455 460
 Leu Leu Lys Glu Gly Thr Arg Glu Arg Val Glu Ala Ile Leu Phe Cys
 465 470 475 480
 Ala Cys Tyr Cys Gln Lys Leu Leu Ala Leu Ile Ser Tyr Pro Ile Ile
 485 490 495
 Pro Glu Ser Ala Val Ala Ile Trp Glu Met Ile Ser Pro Lys Ser Leu
 500 505 510
 Glu Asn Cys Asn Leu Asp Thr Met Tyr Ala Arg Asp Leu Trp Lys Glu
 515 520 525
 Glu Ile Leu Asp Val Ile Asn Glu Glu Phe His Leu Lys Ser Pro Arg
 530 535 540
 Leu Leu Phe Thr Thr Val Glu Thr Xaa Xaa Xaa Phe Xaa Xaa Xaa
 545 550 555 560

<210> 493

<211> 97

<212> PRT

<213> Chlamydia pneumoniae

<400> 493

Met Ile Lys Lys Asp Arg Phe Thr Asn Glu Lys Leu Asn Lys Leu Phe
 1 5 10 15
 Asp Ser Pro Phe Ser Leu Val Asn Tyr Ala Ile Lys Gln Ala Lys Ile
 20 25 30
 Lys Ile Ala Lys Gly Asp Val Arg Ser Ser Asn Val Ala Ile Glu Thr
 35 40 45
 Leu Val Leu Leu Asp Arg Glu Gly Ile Gln Pro Glu Phe Thr Glu Glu
 50 55 60
 Ile Val Val Thr Ala Ser Pro Thr Val Glu Arg Lys Arg Ser Glu His
 65 70 75 80
 Thr Asn Ser Arg Lys Lys Asp Pro Ser Ala Tyr Thr Trp Ser Asp Val
 85 90 95

Lys

<210> 494

<211> 205

<212> PRT

<213> Chlamydia pneumoniae

<400> 494

Met	Asn	Lys	Ile	Leu	Val	Asp	Ser	Pro	Phe	Ser	Pro	Asp	His	Gln	Lys
1				5					10					15	
Cys	Cys	Pro	Lys	Leu	Phe	Thr	Ile	Ser	Ala	Pro	Ala	Gly	Val	Gly	Lys
			20					25					30		
Thr	Thr	Leu	Val	Arg	Met	Leu	Glu	Gln	Glu	Phe	Ser	Ser	Ala	Phe	Ala
		35					40					45			
Glu	Thr	Ile	Ser	Val	Thr	Thr	Arg	Lys	Pro	Arg	Glu	Gly	Glu	Val	Pro
	50					55					60				
Gly	Lys	Asp	Tyr	His	Phe	Val	Ser	His	Glu	Glu	Phe	Gln	Arg	Leu	Leu
65					70					75					80
Asp	Arg	Gln	Ala	Leu	Leu	Glu	Trp	Val	Phe	Leu	Phe	Gly	Glu	Cys	Tyr
				85					90					95	
Gly	Thr	Ser	Met	Leu	Glu	Ile	Glu	Arg	Ile	Trp	Ser	Leu	Gly	Lys	His
			100					105					110		
Ala	Val	Ala	Val	Ile	Asp	Ile	Gln	Gly	Ala	Leu	Phe	Ile	Arg	Ser	Arg
			115					120					125		
Met	Pro	Ser	Val	Ser	Ile	Phe	Ile	Ala	Pro	Pro	Ser	Gln	Glu	Glu	Leu
	130					135					140				
Glu	Arg	Arg	Leu	Ala	Ser	Arg	Gly	Ser	Glu	Glu	Gly	Ser	Gln	Arg	Lys
145						150				155					160
Glu	Arg	Leu	Glu	His	Ser	Leu	Ile	Glu	Leu	Ala	Ala	Ala	Asn	Gln	Phe
				165					170					175	
Asp	Tyr	Val	Ile	Ile	Asn	Asp	Asp	Leu	Asn	Gln	Ala	Tyr	Arg	Val	Leu
			180					185					190		
Lys	Ser	Ile	Phe	Ile	Ala	Glu	Glu	His	Arg	Asn	Ile	Leu			
		195					200					205			

<210> 495

<211> 602

<212> PRT

<213> Chlamydia pneumoniae

<400> 495

Met	Lys	Glu	Tyr	Lys	Ile	Glu	Asn	Ile	Arg	Asn	Phe	Ser	Ile	Ile	Ala
1				5					10					15	
His	Ile	Asp	His	Gly	Lys	Ser	Thr	Ile	Ala	Asp	Arg	Leu	Leu	Glu	Ser
			20					25					30		
Thr	Ser	Thr	Val	Glu	Glu	Arg	Glu	Met	Arg	Glu	Gln	Leu	Leu	Asp	Ser
		35					40					45			
Met	Asp	Leu	Glu	Arg	Glu	Arg	Gly	Ile	Thr	Ile	Lys	Ala	His	Pro	Val
	50					55					60				
Thr	Met	Thr	Tyr	Leu	Tyr	Glu	Gly	Glu	Val	Tyr	Gln	Leu	Asn	Leu	Ile
65				70						75					80
Asp	Thr	Pro	Gly	His	Val	Asp	Phe	Ser	Tyr	Glu	Val	Ser	Arg	Ser	Leu
				85					90					95	
Ser	Ala	Cys	Glu	Gly	Ala	Leu	Leu	Ile	Val	Asp	Ala	Ala	Gln	Gly	Val
			100					105					110		
Gln	Ala	Gln	Ser	Leu	Ala	Asn	Val	Tyr	Leu	Ala	Leu	Glu	Arg	Asp	Leu
			115				120					125			
Glu	Ile	Ile	Pro	Val	Leu	Asn	Lys	Ile	Asp	Leu	Pro	Ala	Ala	Asp	Pro
	130					135					140				
Val	Arg	Ile	Ala	Gln	Gln	Ile	Glu	Asp	Tyr	Ile	Gly	Leu	Asp	Thr	Thr
145					150					155					160
Asn	Ile	Ile	Ala	Cys	Ser	Ala	Lys	Thr	Gly	Gln	Gly	Ile	Pro	Ala	Ile

165 170 175
 Leu Lys Ala Ile Ile Asp Leu Val Pro Pro Pro Lys Ala Pro Ala Glu
 180 185 190
 Thr Glu Leu Lys Ala Leu Val Phe Asp Ser His Tyr Asp Pro Tyr Val
 195 200 205
 Gly Ile Met Val Tyr Val Arg Ile Ile Ser Gly Glu Leu Lys Lys Gly
 210 215 220
 Asp Arg Ile Thr Phe Met Ala Ala Lys Gly Ser Ser Phe Glu Val Leu
 225 230 235 240
 Gly Ile Gly Ala Phe Leu Pro Lys Ala Thr Phe Ile Glu Gly Ser Leu
 245 250 255
 Arg Pro Gly Gln Val Gly Phe Phe Ile Ala Asn Leu Lys Lys Val Lys
 260 265 270
 Asp Val Lys Ile Gly Asp Thr Val Thr Lys Thr Lys His Pro Ala Lys
 275 280 285
 Thr Pro Leu Glu Gly Phe Lys Glu Ile Asn Pro Val Val Phe Ala Gly
 290 295 300
 Ile Tyr Pro Ile Asp Ser Ser Asp Phe Asp Thr Leu Lys Asp Ala Leu
 305 310 315 320
 Gly Arg Leu Gln Leu Asn Asp Ser Ala Leu Thr Ile Glu Gln Glu Ser
 325 330 335
 Ser His Ser Leu Gly Phe Gly Phe Arg Cys Gly Phe Leu Gly Leu Leu
 340 345 350
 His Leu Glu Ile Ile Phe Glu Arg Ile Ile Arg Glu Phe Asp Leu Asp
 355 360 365
 Ile Ile Ala Thr Ala Pro Ser Val Ile Tyr Lys Val Val Leu Lys Asn
 370 375 380
 Gly Lys Val Leu Asp Ile Asp Asn Pro Ser Gly Tyr Pro Asp Pro Ala
 385 390 395 400
 Ile Ile Glu His Val Glu Glu Pro Trp Val His Val Asn Ile Ile Thr
 405 410 415
 Pro Gln Glu Tyr Leu Ser Asn Ile Met Asn Leu Cys Leu Asp Lys Arg
 420 425 430
 Gly Ile Cys Val Lys Thr Glu Met Leu Asp Gln His Arg Leu Val Leu
 435 440 445
 Ala Tyr Glu Leu Pro Leu Asn Glu Ile Val Ser Asp Phe Asn Asp Lys
 450 455 460
 Leu Lys Ser Val Thr Lys Gly Tyr Gly Ser Phe Asp Tyr Arg Leu Gly
 465 470 475 480
 Asp Tyr Arg Lys Gly Ser Ile Ile Lys Leu Glu Val Leu Ile Asn Glu
 485 490 495
 Glu Pro Ile Asp Ala Phe Ser Cys Leu Val His Arg Asp Lys Ala Glu
 500 505 510
 Ser Arg Gly Arg Ser Ile Cys Glu Lys Leu Val Asp Val Ile Pro Gln
 515 520 525
 Gln Leu Phe Lys Ile Pro Ile Gln Ala Ala Ile Asn Lys Lys Val Ile
 530 535 540
 Ala Arg Glu Thr Ile Arg Ala Leu Ser Lys Asn Val Thr Ala Lys Cys
 545 550 555 560
 Tyr Gly Gly Asp Ile Thr Arg Lys Arg Lys Leu Trp Glu Lys Gln Lys
 565 570 575
 Lys Gly Lys Lys Arg Met Lys Glu Phe Gly Lys Val Ser Ile Pro Asn
 580 585 590
 Thr Ala Phe Ile Glu Val Leu Lys Leu Asp
 595 600

<210> 496

<211> 324
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 496

Met	Glu	Leu	Leu	Pro	His	Glu	Lys	Gln	Val	Val	Glu	Tyr	Glu	Lys	Ala
1				5					10					15	
Ile	Ala	Glu	Phe	Lys	Glu	Lys	Asn	Lys	Lys	Asn	Ser	Leu	Leu	Ser	Ser
			20					25					30		
Ser	Glu	Ile	Gln	Lys	Leu	Glu	Lys	Arg	Leu	Asp	Lys	Leu	Lys	Glu	Lys
		35					40					45			
Ile	Tyr	Ser	Asp	Leu	Thr	Pro	Trp	Glu	Arg	Val	Gln	Ile	Cys	Arg	His
	50					55					60				
Pro	Ser	Arg	Pro	Arg	Thr	Val	Asn	Tyr	Ile	Glu	Gly	Met	Cys	Glu	Glu
65					70					75					80
Phe	Val	Glu	Leu	Cys	Gly	Asp	Arg	Thr	Phe	Arg	Asp	Asp	Pro	Ala	Val
				85					90					95	
Val	Gly	Gly	Phe	Val	Lys	Ile	Gln	Gly	Gln	Arg	Phe	Val	Leu	Ile	Gly
			100					105					110		
Gln	Glu	Lys	Gly	Cys	Asp	Thr	Ala	Ser	Arg	Leu	His	Arg	Asn	Phe	Gly
		115					120					125			
Met	Leu	Cys	Pro	Glu	Gly	Phe	Arg	Lys	Ala	Leu	Arg	Leu	Gly	Lys	Leu
	130					135					140				
Ala	Glu	Lys	Phe	Gly	Leu	Pro	Val	Val	Phe	Leu	Val	Asp	Thr	Pro	Gly
145					150					155					160
Ala	Tyr	Pro	Gly	Leu	Thr	Ala	Glu	Glu	Arg	Gly	Gln	Gly	Trp	Ala	Ile
				165					170					175	
Ala	Lys	Asn	Leu	Phe	Glu	Leu	Ser	Arg	Leu	Ala	Thr	Pro	Val	Ile	Ile
			180					185					190		
Val	Val	Ile	Gly	Glu	Gly	Cys	Ser	Gly	Gly	Ala	Leu	Gly	Met	Ala	Val
		195					200					205			
Gly	Asp	Ser	Val	Ala	Met	Leu	Glu	His	Ser	Tyr	Tyr	Ser	Val	Ile	Ser
	210					215					220				
Pro	Glu	Gly	Cys	Ala	Ser	Ile	Leu	Trp	Lys	Asp	Pro	Lys	Lys	Asn	Ser
225					230					235					240
Glu	Ala	Ala	Ser	Met	Leu	Lys	Met	His	Gly	Glu	Asn	Leu	Lys	Gln	Phe
				245					250					255	
Gly	Ile	Ile	Asp	Thr	Val	Ile	Lys	Glu	Pro	Ile	Gly	Gly	Ala	His	His
			260					265					270		
Asp	Pro	Ala	Leu	Val	Tyr	Ser	Asn	Val	Arg	Glu	Phe	Ile	Ile	Gln	Glu
		275					280					285			
Trp	Leu	Arg	Leu	Lys	Asp	Leu	Ala	Ile	Glu	Glu	Leu	Leu	Glu	Lys	Arg
	290					295					300				
Tyr	Glu	Lys	Phe	Arg	Ser	Ile	Gly	Leu	Tyr	Glu	Thr	Thr	Ser	Glu	Ser
305					310					315					320
Gly	Pro	Glu	Ala												

<210> 497
 <211> 659
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 497

Met	Lys	Leu	Leu	Leu	Lys	Ala	Val	Leu	Arg	His	Lys	Asn	His	Leu	Val
1				5					10					15	
Ile	Leu	Gly	Cys	Ser	Leu	Leu	Ala	Ile	Leu	Gly	Leu	Thr	Phe	Ser	Ser

Phe Tyr Asp Ile Gln Thr Pro Leu Glu Asn Leu Tyr Leu Leu Phe Ser
 210 215 220
 Lys Gln His Cys Ser Arg Val Pro Ile Cys Asn Asp Asn Leu Gln Asn
 225 230 235 240
 Leu Leu Gly Ile Cys Thr Ala Arg Ser Leu Leu Leu His Asp Lys Pro
 245 250 255
 Leu Gln Ser Ser Asp Asp Leu Leu Pro Leu Leu Lys Lys Pro Tyr Tyr
 260 265 270
 Met Pro Glu Thr Ile Ser Ala Lys Met Ala Leu Cys Gln Met Ala Ala
 275 280 285
 Glu Asp Glu Thr Leu Gly Met Ile Ile Asp Glu Tyr Gly Ser Ile Glu
 290 295 300
 Gly Leu Ile Thr Gln Glu Asp Leu Phe Glu Ile Val Ala Gly Glu Ile
 305 310 315 320
 Val Asp Gln Arg Asp Asn Lys Ile Leu Tyr Thr Thr Ser Gly Ala Asp
 325 330 335
 Val Ile Ile Ala Ser Gly Thr Leu Glu Leu Arg Glu Phe Ser Glu Ile
 340 345 350
 Phe Asp Ile Asn Leu Pro Thr Asn Asn Asn Ile Ala Thr Ile Gly Gly
 355 360 365
 Trp Leu Ile Glu Gln Ile Gly Thr Ile Pro Thr Thr Gly Met Lys Leu
 370 375 380
 Ser Trp Asn Asn Leu Leu Phe Gln Val Leu Asp Ala Ala Pro Asn Arg
 385 390 395 400
 Ile Arg Arg Val Tyr Ile Arg Lys Leu Tyr Asp
 405 410

<210> 499

<211> 404

<212> PRT

<213> Chlamydia pneumoniae

<400> 499

Met Thr Asn Ser Ala Leu Phe Trp Ile Gly Val Asn Ile Ile Cys Ile
 1 5 10 15
 Val Leu Gln Gly Phe Tyr Ser Met Met Glu Met Ala Cys Val Ser Phe
 20 25 30
 Asn Arg Val Arg Leu Gln Tyr Tyr Leu Thr Lys Asp His Lys Lys Ala
 35 40 45
 Arg Tyr Ile Asn Phe Leu Ile Arg Arg Pro Tyr Arg Leu Phe Gly Thr
 50 55 60
 Val Met Leu Gly Val Asn Ile Ala Leu Gln Val Gly Ser Glu Ser Ser
 65 70 75 80
 Arg Asn Cys Tyr Arg Ala Leu Gly Ile Thr Pro Asp Tyr Ala Pro Phe
 85 90 95
 Thr Gln Ile Phe Ile Val Val Ile Phe Ala Glu Leu Leu Pro Leu Thr
 100 105 110
 Ile Ser Arg Lys Ile Pro Glu Lys Leu Ala Leu Trp Gly Ala Pro Ile
 115 120 125
 Leu Tyr Tyr Ser His Tyr Ile Phe Tyr Pro Leu Ile Gln Leu Ile Gly
 130 135 140
 Ser Leu Thr Glu Gly Leu Tyr Tyr Leu Leu Asn Ile Arg Lys Glu Lys
 145 150 155 160
 Leu Asn Ser Thr Leu Ser Arg Asp Glu Phe Gln Lys Ala Leu Glu Thr
 165 170 175
 His His Glu Glu Gln Asp Phe Asn Thr Ile Ala Thr Asn Ile Phe Ser
 180 185 190

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<210> 500
<211> 543
<212> PRT
<213> Chlamydia pneumoniae
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<400>	500															
Met	Phe	Gly	Ser	Glu	Ser	Leu	Arg	Tyr	Gln	Leu	Leu	Ile	Gln	Asp	Phe	
1				5					10					15		
Ala	Lys	Val	Ser	Glu	Glu	Gly	Ile	Gly	Leu	Leu	Glu	Ser	Lys	Glu	Tyr	
			20					25					30			
Ser	Leu	Leu	Gln	Ala	Lys	Leu	Val	Leu	Arg	Ala	Leu	Ala	Gln	Asn	Ser	
		35					40					45				
Ser	Phe	Asp	Asp	Trp	Phe	Arg	Ser	Phe	Lys	Lys	Cys	Gln	Ile	Ser	Tyr	
	50					55					60					
Pro	Glu	Leu	Ala	His	Asp	Arg	Asp	Val	Leu	Glu	Glu	Phe	Gly	Ile	Gln	
65					70					75					80	
Val	Leu	Arg	Glu	Gly	Ile	Glu	Asn	Pro	Ser	Val	Thr	Val	Arg	Ala	Val	
				85					90					95		
Ser	Val	Leu	Ala	Ile	Gly	Leu	Ala	Arg	Asp	Phe	Arg	Leu	Val	Pro	Leu	
			100					105					110			
Leu	Leu	Gln	Ser	Cys	Asn	Asp	Asp	Ser	Ala	Ile	Val	Arg	Ser	Leu	Ala	
		115					120					125				
Leu	Gln	Val	Ala	Val	Asn	Tyr	Gly	Ser	Glu	Ser	Leu	Lys	Lys	Ala	Ile	
	130					135					140					
Val	Glu	Leu	Ala	Arg	Asn	Asp	Asp	Ser	Ile	His	Val	Arg	Ile	Thr	Ala	
145					150					155					160	
Tyr	Gln	Val	Val	Ala	Leu	Leu	Gln	Ile	Glu	Glu	Leu	Leu	Pro	Phe	Leu	
				165					170					175		

Arg Glu Arg Ala Glu Asn Lys Leu Val Asp Ser Val Glu Arg Arg Glu
 180 185 190
 Ala Trp Lys Ala Cys Leu Glu Leu Ser Ser Gln Phe Leu Glu Thr Gly
 195 200 205
 Val Ala Lys Asp Asp Ile Asp Gln Ala Leu Phe Thr Cys Glu Val Leu
 210 215 220
 Arg Asn Gly Met Leu Pro Glu Thr Thr Glu Ile Phe Thr Glu Leu Leu
 225 230 235 240
 Ser Val Glu His Pro Glu Val Gln Glu Ser Leu Leu Leu Ser Ala Leu
 245 250 255
 Ala Trp Ser His Gln Leu Gln Asn His Lys Glu Phe Leu Ser Lys Val
 260 265 270
 Arg His Val Met Cys Thr Ser Pro Phe Ala Lys Val Arg Phe Gln Ala
 275 280 285
 Ala Ala Leu Leu His Leu His Gly Asp Pro Leu Gly Arg Asp Ser Leu
 290 295 300
 Val Glu Gly Leu Arg Ser Pro Gln Pro Leu Val Cys Glu Ala Ala Ser
 305 310 315 320
 Ala Ala Leu Cys Ser Leu Gly Ile His Gly Val Pro Leu Ala Lys Glu
 325 330 335
 His Leu Glu Ser Leu Ser Ser Arg Lys Ala Ala Ala Asn Leu Ser Ile
 340 345 350
 Leu Leu Leu Val Ser Arg Glu Asp Ile Glu Arg Ala Gly Asp Val Ile
 355 360 365
 Ala Arg Tyr Leu Ser Asn Pro Glu Met Cys Trp Ala Ile Glu Tyr Phe
 370 375 380
 Leu Trp Asp Ala Gln Trp Asn Leu Arg Gly Asp Thr Phe Pro Leu Tyr
 385 390 395 400
 Ser Asp Met Ile Lys Arg Glu Ile Gly Arg Lys Leu Ile Arg Leu Leu
 405 410 415
 Ala Val Ala Arg Tyr Ser Gln Ala Lys Ala Val Thr Ala Thr Phe Leu
 420 425 430
 Ser Gly Gln Gln Ala Gln Gly Trp Ser Phe Phe Ser Gly Met Phe Trp
 435 440 445
 Glu Glu Gly Asp Val Lys Thr Ser Glu Asp Leu Val Thr Asp Ala Cys
 450 455 460
 Phe Ala Ala Lys Leu Glu Gly Ala Leu Ala Ser Leu Cys Gln Lys Lys
 465 470 475 480
 Asp Gln Ala Ser Leu Gln Arg Val Ser Gln Leu Tyr Asn Asp Ser Arg
 485 490 495
 Trp Gln Asp Lys Leu Ala Ile Leu Glu Ser Val Ala Phe Ser Glu Asn
 500 505 510
 Leu Asp Ala Val Pro Phe Leu Leu Asp Cys Cys His His Glu Ala Pro
 515 520 525
 Ser Leu Arg Ser Ala Ala Ala Gly Ala Leu Phe Ser Ile Phe Lys
 530 535 540

<210> 501
 <211> 103
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 501
 Met Ser Phe Lys Arg Phe Leu Gln Gln Ile Pro Val Arg Ile Cys Leu
 1 5 10 15
 Leu Ile Ile Tyr Leu Tyr Gln Trp Leu Ile Ser Pro Leu Leu Gly Ser
 20 25 30

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<210> 502
<211> 362
<212> PRT
<213> Chlamydia pneumoniae
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<400>	502																		
Met	Ala	Phe	Lys	Arg	Lys	Thr	Arg	Trp	Leu	Trp	Gln	Val	Leu	Ile	Leu				
1				5					10					15					
Ser	Val	Gly	Leu	Asn	Met	Leu	Phe	Leu	Leu	Leu	Phe	Tyr	Ser	Ala	Ile				
			20					25					30						
Phe	Arg	Lys	Asp	Ile	Tyr	Lys	Leu	His	Leu	Phe	Ser	Gly	Pro	Leu	Ile				
		35					40					45							
Ala	Lys	Ser	Ser	Arg	Lys	Val	Tyr	Leu	Ser	Glu	Asp	Phe	Leu	Asn	Glu				
	50					55					60								
Ile	Ser	Gln	Ala	Ser	Leu	Asp	Asp	Leu	Ile	Ser	Leu	Phe	Lys	Asp	Glu				
65					70					75					80				
Arg	Tyr	Met	Tyr	Gly	Arg	Pro	Ile	Lys	Leu	Trp	Ala	Leu	Ser	Val	Ala				
				85					90					95					
Ile	Ala	Ser	His	His	Ile	Asp	Ile	Thr	Pro	Val	Leu	Ser	Lys	Pro	Leu				
			100					105						110					
Thr	Tyr	Thr	Glu	Leu	Lys	Gly	Ser	Ser	Val	Arg	Trp	Leu	Leu	Pro	Asn				
		115					120					125							
Ile	Asp	Leu	Lys	Asp	Phe	Pro	Val	Ile	Leu	Asp	Tyr	Leu	Arg	Cys	His				
	130					135					140								
Lys	Tyr	Pro	Tyr	Thr	Ser	Lys	Gly	Leu	Phe	Leu	Leu	Ile	Glu	Lys	Met				
145					150					155				160					
Val	Gln	Glu	Gly	Trp	Val	Asp	Glu	Asp	Cys	Leu	Tyr	His	Phe	Cys	Ser				
			165						170					175					
Thr	Pro	Glu	Phe	Leu	Tyr	Leu	Arg	Thr	Leu	Leu	Val	Gly	Ala	Asp	Val				
			180					185					190						
Gln	Ala	Ser	Ser	Val	Ala	Ser	Leu	Ala	Arg	Met	Val	Ile	Arg	Cys	Gly				
		195					200					205							
Ser	Glu	Arg	Phe	Phe	His	Phe	Cys	Asn	Glu	Glu	Ser	Arg	Thr	Ser	Met				
	210					215					220								
Ile	Ser	Ala	Thr	Gln	Arg	Gln	Lys	Val	Leu	Lys	Ser	Tyr	Leu	Asp	Cys				
225					230					235					240				
Glu	Glu	Ser	Leu	Ala	Leu	Leu	Leu	Leu	Leu	Val	His	Asp	Ser	Asp	Val				
			245						250					255					
Val	Leu	His	Glu	Phe	Cys	Asp	Glu	Asp	Leu	Glu	Lys	Val	Ile	Arg	Leu				
			260					265					270						
Met	Pro	Gln	Glu	Ser	Pro	Tyr	Ser	Gln	Asn	Phe	Phe	Ser	Arg	Leu	Gln				
		275					280					285							
His	Ser	Pro	Arg	Arg	Glu	Leu	Ala	Cys	Met	Ser	Thr	Gln	Arg	Val	Glu	</			


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<210> 504
<211> 435
<212> PRT
<213> Chlamydia pneumoniae
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<400>	504														
Met	Phe	Ser	Arg	Trp	Ile	Thr	Leu	Phe	Leu	Leu	Phe	Ile	Ser	Leu	Thr
1				5					10					15	
Gly	Cys	Ser	Ser	Tyr	Ser	Ser	Lys	His	Lys	Gln	Ser	Leu	Ile	Ile	Pro
			20					25					30		
Ile	His	Asp	Asp	Pro	Val	Ala	Phe	Ser	Pro	Glu	Gln	Ala	Lys	Arg	Ala
		35					40					45			
Met	Asp	Leu	Ser	Ile	Ala	Gln	Leu	Leu	Phe	Asp	Gly	Leu	Thr	Arg	Glu
	50					55					60				
Thr	His	Arg	Glu	Ser	Asn	Asp	Leu	Glu	Leu	Ala	Ile	Ala	Ser	Arg	Tyr
65					70					75					80
Thr	Val	Ser	Glu	Asp	Phe	Cys	Ser	Tyr	Thr	Phe	Phe	Ile	Lys	Asp	Ser
				85					90					95	
Ala	Leu	Trp	Ser	Asp	Gly	Thr	Pro	Ile	Thr	Ser	Glu	Asp	Ile	Arg	Asn
			100					105					110		
Ala	Trp	Glu	Tyr	Ala	Gln	Glu	Asn	Ser	Pro	His	Ile	Gln	Ile	Phe	Gln
		115					120					125			
Gly	Leu	Asn	Phe	Ser	Thr	Pro	Ser	Ser	Asn	Ala	Ile	Thr	Ile	His	Leu
	130					135					140				
Asp	Ser	Pro	Asn	Pro	Asp	Phe	Pro	Lys	Leu	Leu	Ala	Phe	Pro	Ala	Phe
145					150					155					160

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<210> 505
<211> 171
<212> PRT
<213> Chlamydia pneumoniae
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Met	Lys	Lys	Leu	Leu	Phe	Ser	Thr	Phe	Leu	Leu	Val	Leu	Gly	Ser	Thr
1				5					10					15	
Ser	Ala	Ala	His	Ala	Asn	Leu	Gly	Tyr	Val	Asn	Leu	Lys	Arg	Cys	Leu
			20					25					30		
Glu	Glu	Ser	Asp	Leu	Gly	Lys	Lys	Glu	Thr	Glu	Glu	Leu	Glu	Ala	Met
		35					40					45			
Lys	Gln	Gln	Phe	Val	Lys	Asn	Ala	Glu	Lys	Ile	Glu	Glu	Glu	Leu	Thr
	50					55					60				
Ser	Ile	Tyr	Asn	Lys	Leu	Gln	Asp	Glu	Asp	Tyr	Met	Glu	Ser	Leu	Ser
65				70					75					80	
Asp	Ser	Ala	Ser	Glu	Glu	Leu	Arg	Lys	Lys	Phe	Glu	Asp	Leu	Ser	Gly
				85					90				95		
Glu	Tyr	Asn	Ala	Tyr	Gln	Ser	Gln	Tyr	Tyr	Gln	Ser	Ile	Asn	Gln	Ser
			100					105					110		

Asn Val Lys Arg Ile Gln Lys Leu Ile Gln Glu Val Lys Ile Ala Ala
 115 120 125
 Glu Ser Val Arg Ser Lys Glu Lys Leu Glu Ala Ile Leu Asn Glu Glu
 130 135 140
 Ala Val Leu Ala Ile Ala Pro Gly Thr Asp Lys Thr Thr Glu Ile Ile
 145 150 155 160
 Ala Ile Leu Asn Glu Ser Phe Lys Lys Gln Asn
 165 170

<210> 506

<211> 360

<212> PRT

<213> Chlamydia pneumoniae

<400> 506

Met Ser Glu Ala Pro Val Tyr Thr Leu Lys Gln Leu Ala Glu Leu Leu
 1 5 10 15
 Gln Val Glu Val Gln Gly Asn Ile Glu Thr Pro Ile Ser Gly Val Glu
 20 25 30
 Asp Ile Ser Gln Ala Gln Pro His His Ile Ala Phe Leu Asp Asn Glu
 35 40 45
 Lys Tyr Ser Ser Phe Leu Lys Asn Thr Lys Ala Gly Ala Ile Ile Leu
 50 55 60
 Ser Arg Ser Gln Ala Met Gln His Ala His Leu Lys Lys Asn Phe Leu
 65 70 75 80
 Ile Thr Asn Glu Ser Pro Ser Leu Thr Phe Gln Lys Cys Ile Glu Leu
 85 90 95
 Phe Ile Glu Pro Val Thr Ser Gly Phe Pro Gly Ile His Pro Thr Ala
 100 105 110
 Val Ile His Pro Thr Ala Arg Ile Glu Lys Asn Val Thr Ile Glu Pro
 115 120 125
 Tyr Val Val Ile Ser Gln His Ala His Ile Gly Ser Asp Thr Tyr Ile
 130 135 140
 Gly Ala Gly Ser Val Ile Gly Ala His Ser Val Leu Gly Ala Asn Cys
 145 150 155 160
 Leu Ile His Pro Lys Val Val Ile Arg Glu Arg Val Leu Met Gly Asn
 165 170 175
 Arg Val Val Val Gln Pro Gly Ala Val Leu Gly Ser Cys Gly Phe Gly
 180 185 190
 Tyr Ile Thr Asn Ala Phe Gly His His Lys Pro Leu Lys His Leu Gly
 195 200 205
 Tyr Val Ile Val Gly Asp Asp Val Glu Ile Gly Ala Asn Thr Thr Ile
 210 215 220
 Asp Arg Gly Arg Phe Lys Asn Thr Val Ile His Glu Gly Thr Lys Ile
 225 230 235 240
 Asp Asn Gln Val Gln Val Ala His His Val Glu Ile Gly Lys His Ser
 245 250 255
 Ile Ile Val Ala Gln Ala Gly Ile Ala Gly Ser Thr Lys Ile Gly Glu
 260 265 270
 His Val Ile Ile Gly Gly Gln Thr Gly Ile Thr Gly His Ile Ser Ile
 275 280 285
 Ala Asp His Val Ile Met Ile Ala Gln Thr Gly Val Thr Lys Ser Ile
 290 295 300
 Thr Ser Pro Gly Ile Tyr Gly Gly Ala Pro Ala Arg Pro Tyr Gln Glu
 305 310 315 320
 Thr His Arg Leu Ile Ala Lys Ile Arg Asn Leu Pro Lys Thr Glu Glu
 325 330 335

Arg Leu Ser Lys Leu Glu Lys Gln Val Arg Asp Leu Ser Thr Pro Ser
 340 345 350
 Leu Ala Glu Ile Pro Ser Glu Ile
 355 360

<210> 507

<211> 399

<212> PRT

<213> Chlamydia pneumoniae

<400> 507

Met	Ala	Ala	Ser	Gly	Gly	Thr	Gly	Gly	Leu	Gly	Gly	Thr	Gln	Gly	Val
1				5					10				15		
Asn	Leu	Ala	Ala	Val	Glu	Ala	Ala	Ala	Lys	Ala	Asp	Ala	Ala	Glu	
			20					25				30			
Val	Val	Ala	Ser	Gln	Glu	Gly	Ser	Glu	Met	Asn	Met	Ile	Gln	Gln	Ser
		35					40					45			
Gln	Asp	Leu	Thr	Asn	Pro	Ala	Ala	Ala	Thr	Arg	Thr	Lys	Lys	Lys	Glu
	50					55					60				
Glu	Lys	Phe	Gln	Thr	Leu	Glu	Ser	Arg	Lys	Lys	Gly	Glu	Ala	Gly	Lys
65					70				75					80	
Ala	Glu	Lys	Lys	Ser	Glu	Ser	Thr	Glu	Glu	Lys	Pro	Asp	Thr	Asp	Leu
				85					90					95	
Ala	Asp	Lys	Tyr	Ala	Ser	Gly	Asn	Ser	Glu	Ile	Ser	Gly	Gln	Glu	Leu
			100					105					110		
Arg	Gly	Leu	Arg	Asp	Ala	Ile	Gly	Asp	Asp	Ala	Ser	Pro	Glu	Asp	Ile
	115						120					125			
Leu	Ala	Leu	Val	Gln	Glu	Lys	Ile	Lys	Asp	Pro	Ala	Leu	Gln	Ser	Thr
	130					135					140				
Ala	Leu	Asp	Tyr	Leu	Val	Gln	Thr	Thr	Pro	Pro	Ser	Gln	Gly	Lys	Leu
145					150					155					160
Lys	Glu	Ala	Leu	Ile	Gln	Ala	Arg	Asn	Thr	His	Thr	Glu	Gln	Phe	Gly
				165					170					175	
Arg	Thr	Ala	Ile	Gly	Ala	Lys	Asn	Ile	Leu	Phe	Ala	Ser	Gln	Glu	Tyr
			180					185					190		
Ala	Asp	Gln	Leu	Asn	Val	Ser	Pro	Ser	Gly	Leu	Arg	Ser	Leu	Tyr	Leu
	195						200					205			
Glu	Val	Thr	Gly	Asp	Thr	His	Thr	Cys	Asp	Gln	Leu	Leu	Ser	Met	Leu
	210					215					220				
Gln	Asp	Arg	Tyr	Thr	Tyr	Gln	Asp	Met	Ala	Ile	Val	Ser	Ser	Phe	Leu
225					230					235					240
Met	Lys	Gly	Met	Ala	Thr	Glu	Leu	Lys	Arg	Gln	Gly	Pro	Tyr	Val	Pro
				245					250					255	
Ser	Ala	Gln	Leu	Gln	Val	Leu	Met	Thr	Glu	Thr	Arg	Asn	Leu	Gln	Ala
			260					265					270		
Val	Leu	Thr	Ser	Tyr	Asp	Tyr	Phe	Glu	Ser	Arg	Val	Pro	Ile	Leu	Leu
		275					280					285			
Asp	Ser	Leu	Lys	Ala	Glu	Gly	Ile	Gln	Thr	Pro	Ser	Asp	Leu	Asn	Phe
	290					295						300			
Val	Lys	Val	Ala	Glu	Ser	Tyr	His	Lys	Ile	Ile	Asn	Asp	Lys	Phe	Pro
305					310					315					320
Thr	Ala	Ser	Lys	Val	Glu	Arg	Glu	Val	Arg	Asn	Leu	Ile	Gly	Asp	Asp
			325						330					335	
Val	Asp	Ser	Val	Thr	Gly	Val	Leu	Asn	Leu	Phe	Phe	Ser	Ala	Leu	Arg
			340					345					350		
Gln	Thr	Ser	Ser	Arg	Leu	Phe	Ser	Ser	Ala	Asp	Lys	Arg	Gln	Gln	Leu
		355					360						365		

Gly Ala Met Ile Ala Asn Ala Leu Asp Ala Val Asn Ile Asn Asn Glu
 370 375 380
 Asp Tyr Pro Lys Ala Ser Asp Phe Pro Lys Pro Tyr Pro Trp Ser
 385 390 395

<210> 508

<211> 224

<212> PRT

<213> Chlamydia pneumoniae

<400> 508

Met Thr Ser Trp Ile Glu Leu Leu Asp Lys Gln Ile Glu Asp Gln His
 1 5 10 15
 Met Leu Lys His Glu Phe Tyr Gln Arg Trp Ser Glu Gly Lys Leu Glu
 20 25 30
 Lys Gln Gln Leu Gln Ala Tyr Ala Lys Asp Tyr Tyr Leu His Ile Lys
 35 40 45
 Ala Phe Pro Cys Tyr Leu Ser Ala Leu His Ala Arg Cys Asp Asp Leu
 50 55 60
 Gln Ile Arg Arg Gln Ile Leu Glu Asn Leu Met Asp Glu Glu Ala Gly
 65 70 75 80
 Asn Pro Asn His Ile Asp Leu Trp Arg Gln Phe Ala Leu Ser Leu Gly
 85 90 95
 Val Ser Glu Glu Glu Leu Ala Asn His Glu Phe Ser Gln Ala Ala Gln
 100 105 110
 Asp Met Val Ala Thr Phe Arg Arg Leu Cys Asp Met Pro Gln Leu Ala
 115 120 125
 Val Gly Leu Gly Ala Leu Tyr Thr Tyr Glu Ile Gln Ile Pro Gln Val
 130 135 140
 Cys Val Glu Lys Ile Arg Gly Leu Lys Glu Tyr Phe Gly Val Ser Ala
 145 150 155 160
 Arg Gly Tyr Ala Tyr Phe Thr Val His Gln Glu Ala Asp Ile Lys His
 165 170 175
 Ala Ser Glu Glu Lys Glu Met Leu Gln Thr Leu Val Gly Arg Glu Asn
 180 185 190
 Pro Asp Ala Val Leu Gln Gly Ser Gln Glu Val Leu Asp Thr Leu Trp
 195 200 205
 Asn Phe Leu Ser Ser Phe Ile Asn Ser Thr Glu Pro Cys Ser Cys Lys
 210 215 220

<210> 509

<211> 246

<212> PRT

<213> Chlamydia pneumoniae

<400> 509

Met Lys Ile Thr Thr Val Lys Thr Pro Lys Ile Tyr Pro Tyr Asp Asp
 1 5 10 15
 Leu Tyr Ser Ile Leu Glu Ser Ser Leu Pro Lys Leu Asn Glu Arg Ser
 20 25 30
 Ile Val Val Ile Thr Ser Lys Ile Val Ser Leu Cys Glu Gly Ala Val
 35 40 45
 Val Glu Leu Glu Lys Val Ser Lys Asp Glu Leu Ile Lys Gln Glu Ala
 50 55 60
 Asp Ala Tyr Val Phe Val Glu Lys Tyr Gly Ile Tyr Leu Thr Lys Lys
 65 70 75 80
 Trp Gly Ile Leu Ile Pro Ser Ala Gly Ile Asp Glu Ser Asn Val Glu

Gly Tyr Phe Val Leu Tyr Pro Arg Asp Phe Leu Leu Ser Val Asn Thr
 100 105 110
 Leu Gly Asp Trp Leu Arg Asn Phe Tyr His Leu Glu His Cys Gly Ile
 115 120 125
 Ile Ile Ser Asp Ser His Thr Thr Pro Leu Arg Arg Gly Thr Met Gly
 130 135 140
 Leu Gly Leu Cys Trp Asn Gly Phe Phe Pro Leu Tyr Asn Tyr Val Gly
 145 150 155 160
 Lys Pro Asp Cys Phe Gly Arg Ala Leu Lys Met Thr Tyr Ser Asn Leu
 165 170 175
 Leu Asp Gly Leu Ser Ala Ala Ala Val Leu Cys Met Gly Glu Gly Asp
 180 185 190
 Glu Gln Thr Pro Ile Ala Ile Ile Glu Glu Ala Pro Lys Ile Thr Phe
 195 200 205
 His Ser Ser Pro Thr Thr Leu Gln Asp Met Ser Thr Leu Ala Ile Ala
 210 215 220
 Glu Asp Glu Asp Leu Tyr Gly Pro Leu Leu Gln Ser Met Ala Trp Glu
 225 230 235 240
 Thr Pro Ala Pro Thr Ser
 245

<210> 510
 <211> 353
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 510
 Met Asn Lys Arg Gln Lys Asp Lys Leu Lys Ile Cys Val Ile Ile Ser
 1 5 10 15
 Thr Leu Ile Leu Val Gly Ile Phe Ala Arg Ala Pro Arg Gly Asp Thr
 20 25 30
 Phe Lys Thr Phe Leu Lys Ser Glu Glu Ala Ile Ile Tyr Ser Asn Gln
 35 40 45
 Cys Asn Glu Asp Met Arg Lys Ile Leu Cys Asp Ala Ile Glu His Ala
 50 55 60
 Asp Glu Glu Ile Phe Leu Arg Ile Tyr Asn Leu Ser Glu Pro Lys Ile
 65 70 75 80
 Gln Gln Ser Leu Thr Arg Gln Ala Gln Ala Lys Asn Lys Val Thr Ile
 85 90 95
 Tyr Tyr Gln Lys Phe Lys Ile Pro Gln Ile Leu Lys Gln Ala Ser Asn
 100 105 110
 Val Thr Leu Val Glu Gln Pro Pro Ala Gly Arg Lys Leu Met His Gln
 115 120 125
 Lys Ala Leu Ser Ile Asp Lys Lys Asp Ala Trp Leu Gly Ser Ala Asn
 130 135 140
 Tyr Thr Asn Leu Ser Leu Arg Leu Asp Asn Asn Leu Ile Leu Gly Met
 145 150 155 160
 His Ser Ser Glu Leu Cys Asp Leu Ile Ile Thr Asn Thr Ser Gly Asp
 165 170 175
 Phe Ser Ile Lys Asp Gln Thr Gly Lys Tyr Phe Val Leu Pro Gln Asp
 180 185 190
 Arg Lys Ile Ala Ile Gln Ala Val Leu Glu Lys Ile Gln Thr Ala Gln
 195 200 205
 Lys Thr Ile Gln Val Ala Met Phe Ala Leu Thr His Ser Glu Ile Ile
 210 215 220
 Gln Ala Leu His Gln Ala Lys Gln Arg Gly Ile His Val Asp Ile Ile

225 230 235 240
 Ile Asp Arg Ser His Ser Lys Leu Thr Phe Lys Gln Leu Arg Gln Leu
 245 250 255
 Asn Ile Asn Lys Asp Phe Val Ser Ile Asn Thr Ala Pro Cys Thr Leu
 260 265 270
 His His Lys Phe Ala Val Ile Asp Asn Lys Thr Leu Leu Ala Gly Ser
 275 280 285
 Ile Asn Trp Ser Lys Gly Arg Phe Ser Leu Asn Asp Glu Ser Leu Ile
 290 295 300
 Ile Leu Glu Asn Leu Thr Lys Gln Gln Asn Gln Lys Leu Arg Met Ile
 305 310 315 320
 Trp Lys Asp Leu Ala Lys His Ser Glu His Pro Thr Val Asp Asp Glu
 325 330 335
 Glu Lys Glu Ile Ile Glu Lys Ser Leu Pro Val Glu Glu Gln Glu Ala
 340 345 350
 Ala

<210> 511
 <211> 186
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 511
 Met Ala Leu Asn Phe Lys Ile Asn Arg Gln Ile Arg Ala Pro Lys Val
 1 5 10 15
 Arg Leu Ile Gly Ser Ala Gly Glu Gln Leu Gly Ile Leu Ala Ile Lys
 20 25 30
 Asp Ala Leu Asp Leu Ala Arg Glu Ala Gly Leu Asp Leu Val Glu Val
 35 40 45
 Ala Ser Asn Ser Glu Pro Pro Val Cys Lys Ile Met Asp Tyr Gly Lys
 50 55 60
 Tyr Arg Tyr Gly Leu Thr Lys Lys Glu Lys Asp Ser Lys Lys Ala Gln
 65 70 75 80
 His Gln Val Arg Ile Lys Glu Val Lys Leu Lys Pro Asn Ile Asp Glu
 85 90 95
 Asn Asp Phe Ser Thr Lys Leu Lys Gln Ala Arg Thr Phe Val Glu Lys
 100 105 110
 Gly Asn Lys Val Lys Ile Thr Cys Met Phe Arg Gly Arg Glu Leu Ala
 115 120 125
 Tyr Pro Glu His Gly Phe Lys Val Val Gln Lys Met Ser Gln Gly Leu
 130 135 140
 Glu Asp Ile Gly Phe Val Glu Ala Glu Pro Lys Leu Ala Gly Arg Ser
 145 150 155 160
 Leu Ile Cys Val Val Ala Pro Gly Thr Val Lys Thr Lys Lys Lys Gln
 165 170 175
 Glu Lys Ser His Ala Gln Asp Glu Asn Gln
 180 185

<210> 512
 <211> 276
 <212> PRT
 <213> Chlamydia pneumoniae

<220>
 <221> VARIANT
 <222> (1)...(276)

<223> Xaa = Any Amino Acid

<400> 512

Met	Gly	Asn	Ser	Gly	Phe	Tyr	Leu	Gln	Asp	Thr	Gln	Asn	Thr	Ile	Phe
1				5					10					15	
Ala	Asp	Asn	Ile	Arg	Leu	Gly	Gln	Met	Thr	Thr	Val	Leu	Lys	Lys	Asp
			20					25					30		
Glu	Val	Ile	Ile	Gly	Thr	Asp	Thr	Thr	Pro	Thr	Val	Thr	Lys	Phe	Ser
		35					40					45			
Gly	Asp	Lys	Gly	Ile	Val	Ile	Thr	Thr	Asp	Ser	Thr	Ile	Thr	Pro	Ser
	50					55					60				
Ser	Thr	Thr	Phe	Ser	Leu	Asp	Met	Glu	Ala	Val	Ile	Lys	Glu	Val	Thr
65					70				75						80
Asp	Lys	Ile	Leu	Thr	Gln	Ile	Glu	Asp	Glu	Leu	Val	Lys	Asp	Ile	Ile
				85					90					95	
Lys	Asn	Ile	Thr	Gln	Ser	Leu	Ile	Glu	Glu	Val	Ile	Lys	Lys	Ile	His
			100					105					110		
Ile	Asp	Pro	Ser	Phe	Ser	Tyr	Ser	Arg	Ala	Phe	Lys	Asp	Val	Asn	Ile
	115						120					125			
Thr	Asn	Lys	Ile	Gln	Cys	Asn	Gly	Leu	Phe	Thr	Lys	Glu	Asn	Ile	Gly
	130					135					140				
Asn	Leu	Asp	Gly	Gly	Thr	Glu	Ile	Ala	Ser	Ser	Ser	Val	Thr	Pro	Asp
145						150				155					160
Asn	Ala	Asn	Ser	Met	Phe	Leu	Ile	Cys	Ala	Asp	Ile	Ile	Ala	Thr	Arg
				165					170					175	
Met	Glu	Gly	Thr	Val	Ala	Leu	Ala	Leu	Val	Lys	Glu	Gly	Asp	Leu	Ser
			180					185					190		
Pro	Cys	Ser	Ile	Ser	Tyr	Gly	Tyr	Ser	Ala	Gly	Tyr	Pro	Asn	Ile	Ile
		195					200					205			
Ser	Leu	Arg	Ala	Thr	Val	Gly	Asn	Lys	Thr	Thr	Ala	Pro	Val	Lys	Phe
	210					215					220				
Ser	Leu	Arg	Ala	Gly	Gly	Met	Asp	Ser	Gly	Val	Val	Trp	Val	Asn	Ala
	225				230					235					240
Met	Pro	Asn	Gly	Glu	Lys	Ile	Leu	Gly	Val	Asp	Ala	Val	Ser	Lys	Ile
			245						250					255	
Thr	Ile	Leu	Glu	Val	Lys	Pro	Gln	Thr	Asn	Gly	Thr	Xaa	Xaa	Xaa	Xaa
			260					265					270		
Phe	Xaa	Xaa	Xaa												
			275												

<210> 513

<211> 1044

<212> PRT

<213> Chlamydia pneumoniae

<400> 513

Met	Val	Glu	Val	Glu	Glu	Lys	His	Tyr	Thr	Ile	Val	Lys	Arg	Asn	Gly
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Met	Phe	Val	Pro	Phe	Asn	Gln	Asp	Arg	Ile	Phe	Gln	Ala	Leu	Glu	Ala
			20					25					30		
Ala	Phe	Arg	Asp	Thr	Arg	Ser	Leu	Glu	Thr	Ser	Ser	Pro	Leu	Pro	Lys
		35					40					45			
Asp	Leu	Glu	Glu	Ser	Ile	Ala	Gln	Ile	Thr	His	Lys	Val	Val	Lys	Glu
	50					55					60				
Val	Leu	Ala	Lys	Ile	Ser	Glu	Gly	Gln	Val	Val	Thr	Val	Glu	Arg	Ile
65					70					75					80
Gln	Asp	Leu	Val	Glu	Ser	Gln	Leu	Tyr	Ile	Ser	Gly	Leu	Gln	Asp	Val

				85				90					95				
Ala	Arg	Asp	Tyr	Ile	Val	Tyr	Arg	Asp	Gln	Arg	Lys	Ala	Glu	Arg	Gly		
			100					105					110				
Asn	Ser	Ser	Ser	Ile	Ile	Ala	Ile	Ile	Arg	Arg	Asp	Gly	Gly	Ser	Ala		
		115						120				125					
Lys	Phe	Asn	Pro	Met	Lys	Ile	Ser	Ala	Ala	Leu	Glu	Lys	Ala	Phe	Arg		
	130					135					140						
Ala	Thr	Leu	Gln	Ile	Asn	Gly	Met	Thr	Pro	Pro	Ala	Thr	Leu	Ser	Glu		
145					150					155					160		
Ile	Asn	Asp	Leu	Thr	Leu	Arg	Ile	Val	Glu	Asp	Val	Leu	Ser	Leu	His		
				165					170					175			
Gly	Glu	Glu	Ala	Ile	Asn	Leu	Glu	Glu	Ile	Gln	Asp	Ile	Val	Glu	Lys		
			180					185					190				
Gln	Leu	Met	Val	Ala	Gly	Tyr	Tyr	Asp	Val	Ala	Lys	Asn	Tyr	Ile	Leu		
		195					200					205					
Tyr	Arg	Glu	Ala	Arg	Ala	Arg	Ala	Arg	Ala	Asn	Lys	Asp	Gln	Asp	Gly		
	210					215					220						
Gln	Glu	Glu	Phe	Val	Pro	Gln	Glu	Glu	Thr	Tyr	Val	Val	Gln	Lys	Glu		
225					230					235					240		
Asp	Gly	Thr	Thr	Tyr	Leu	Leu	Arg	Lys	Thr	Asp	Leu	Glu	Lys	Arg	Phe		
				245					250					255			
Ser	Trp	Ala	Cys	Lys	Arg	Phe	Pro	Lys	Thr	Thr	Asp	Ser	Gln	Leu	Leu		
			260					265					270				
Ala	Asp	Met	Ala	Phe	Met	Asn	Leu	Tyr	Ser	Gly	Ile	Lys	Glu	Asp	Glu		
		275					280					285					
Val	Thr	Thr	Ala	Cys	Ile	Met	Ala	Ala	Arg	Ala	Asn	Ile	Glu	Arg	Glu		
	290					295					300						
Pro	Asp	Tyr	Ala	Phe	Ile	Ala	Ala	Glu	Leu	Leu	Thr	Ser	Ser	Leu	Tyr		
305					310					315					320		
Glu	Glu	Thr	Leu	Gly	Cys	Ser	Ser	Gln	Asp	Pro	Asn	Leu	Ser	Glu	Ile		
				325				330						335			
His	Lys	Lys	His	Phe	Lys	Glu	Tyr	Ile	Leu	Asn	Gly	Glu	Glu	Tyr	Arg		
			340					345					350				
Leu	Asn	Pro	Gln	Leu	Lys	Asp	Tyr	Asp	Leu	Asp	Ala	Leu	Ser	Glu	Val		
		355					360					365					
Leu	Asp	Leu	Ser	Arg	Asp	Gln	Gln	Phe	Ser	Tyr	Met	Gly	Val	Gln	Asn		
	370					375					380						
Leu	Tyr	Asp	Arg	Tyr	Phe	Asn	Leu	His	Glu	Gly	Arg	Arg	Leu	Glu	Thr		
385					390					395					400		
Ala	Gln	Ile	Phe	Trp	Met	Arg	Val	Ser	Met	Gly	Leu	Ala	Leu	Asn	Glu		
				405					410					415			
Gly	Glu	Gln	Lys	Asn	Phe	Trp	Ala	Ile	Thr	Phe	Tyr	Asn	Leu	Leu	Ser		
			420					425					430				
Thr	Phe	Arg	Tyr	Thr	Pro	Ala	Thr	Pro	Thr	Leu	Phe	Asn	Ser	Gly	Met		
		435					440					445					
Arg	His	Ser	Gln	Leu	Ser	Ser	Cys	Tyr	Leu	Ser	Thr	Val	Lys	Asp	Asp		
	450						455					460					
Leu	Ser	His	Ile	Tyr	Lys	Val	Ile	Ser	Asp	Asn	Ala	Leu	Leu	Ser	Lys		
	465				470					475					480		
Trp	Ala	Gly	Gly	Ile	Gly	Asn	Asp	Trp	Thr	Asp	Val	Arg	Ala	Thr	Gly		
				485					490					495			
Ala	Val	Ile	Lys	Gly	Thr	Asn	Gly	Lys	Ser	Gln	Gly	Val	Ile	Pro	Phe		
			500					505					510				
Ile	Lys	Val	Ala	Asn	Asp	Thr	Ala	Ile	Ala	Val	Asn	Gln	Gly	Gly	Lys		
		515					520					525					
Arg	Lys	Gly	Ala	Met	Cys	Val	Tyr	Leu	Glu	Asn	Trp	His	Leu	Asp	Tyr		
	530					535					540						

Glu	Asp	Phe	Leu	Glu	Leu	Arg	Lys	Asn	Thr	Gly	Asp	Glu	Arg	Arg	Arg
545					550					555					560
Thr	His	Asp	Ile	Asn	Thr	Ala	Ser	Trp	Ile	Pro	Asp	Leu	Phe	Phe	Lys
				565					570					575	
Arg	Leu	Glu	Lys	Lys	Gly	Met	Trp	Thr	Leu	Phe	Ser	Pro	Asp	Asp	Val
			580					585					590		
Pro	Gly	Leu	His	Glu	Ala	Tyr	Gly	Leu	Glu	Phe	Glu	Lys	Leu	Tyr	Glu
		595					600					605			
Glu	Tyr	Glu	Arg	Lys	Val	Glu	Ser	Gly	Glu	Ile	Arg	Leu	Tyr	Lys	Lys
	610					615					620				
Val	Glu	Ala	Glu	Val	Leu	Trp	Arg	Lys	Met	Leu	Ser	Met	Leu	Tyr	Glu
625					630					635					640
Thr	Gly	His	Pro	Trp	Ile	Thr	Phe	Lys	Asp	Pro	Ser	Asn	Ile	Arg	Ser
				645					650					655	
Asn	Gln	Asp	His	Val	Gly	Val	Val	Arg	Cys	Ser	Asn	Leu	Cys	Thr	Glu
			660					665					670		
Ile	Leu	Leu	Asn	Cys	Ser	Glu	Ser	Glu	Thr	Ala	Val	Cys	Asn	Leu	Gly
		675						680				685			
Ser	Ile	Asn	Leu	Val	Glu	His	Ile	Arg	Asn	Asp	Lys	Leu	Asp	Glu	Glu
	690					695					700				
Lys	Leu	Lys	Glu	Thr	Ile	Ser	Ile	Ala	Ile	Arg	Ile	Leu	Asp	Asn	Val
705					710					715					720
Ile	Asp	Leu	Asn	Phe	Tyr	Pro	Thr	Pro	Glu	Ala	Lys	Gln	Ala	Asn	Leu
				725					730					735	
Thr	His	Arg	Ala	Val	Gly	Leu	Gly	Val	Met	Gly	Phe	Gln	Asp	Val	Leu
			740					745					750		
Tyr	Glu	Leu	Asn	Ile	Ser	Tyr	Ala	Ser	Gln	Glu	Ala	Val	Glu	Phe	Ser
		755					760					765			
Asp	Glu	Cys	Ser	Glu	Ile	Ile	Ala	Tyr	Tyr	Ala	Ile	Leu	Ala	Ser	Ser
	770					775					780				
Leu	Leu	Ala	Lys	Glu	Arg	Gly	Thr	Tyr	Ala	Ser	Tyr	Ser	Gly	Ser	Lys
785					790					795					800
Trp	Asp	Arg	Gly	Tyr	Leu	Pro	Leu	Asp	Thr	Ile	Glu	Leu	Leu	Lys	Glu
				805					810					815	
Thr	Arg	Gly	Glu	His	Asn	Val	Leu	Val	Asp	Thr	Ser	Ser	Lys	Lys	Asp
			820					825					830		
Trp	Thr	Pro	Val	Arg	Asp	Thr	Ile	Gln	Lys	Tyr	Gly	Met	Arg	Asn	Ser
		835					840					845			
Gln	Val	Met	Ala	Ile	Ala	Pro	Thr	Ala	Thr	Ile	Ser	Asn	Ile	Ile	Gly
	850					855					860				
Val	Thr	Gln	Ser	Ile	Glu	Pro	Met	Tyr	Lys	His	Leu	Phe	Val	Lys	Ser
865					870					875					880
Asn	Leu	Ser	Gly	Glu	Phe	Thr	Ile	Pro	Asn	Thr	Tyr	Leu	Ile	Lys	Lys
				885					890					895	
Leu	Lys	Glu	Leu	Gly	Leu	Trp	Asp	Ala	Glu	Met	Leu	Asp	Asp	Leu	Lys
		900						905					910		
Tyr	Phe	Asp	Gly	Ser	Leu	Leu	Glu	Ile	Glu	Arg	Ile	Pro	Asn	His	Leu
		915					920					925			
Lys	Lys	Leu	Phe	Leu	Thr	Ala	Phe	Glu	Ile	Glu	Pro	Glu	Trp	Ile	Ile
	930					935					940				
Glu	Cys	Thr	Ser	Arg	Arg	Gln	Lys	Trp	Ile	Asp	Met	Gly	Val	Ser	Leu
945					950					955					960
Asn	Leu	Tyr	Leu	Ala	Glu	Pro	Asp	Gly	Lys	Lys	Leu	Ser	Asn	Met	Tyr
				965					970					975	
Leu	Thr	Ala	Trp	Lys	Lys	Gly	Leu	Lys	Thr	Thr	Tyr	Tyr	Leu	Arg	Ser
			980					985					990		
Gln	Ala	Ala	Thr	Ser	Val	Glu	Lys	Ser	Phe	Ile	Asp	Ile	Asn	Lys	Arg

340

345

<210> 515
 <211> 327
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 515
 Met Asp Ala Lys Met Gly Tyr Ile Phe Lys Val Met Arg Trp Ile Phe
 1 5 10 15
 Cys Phe Val Ala Cys Gly Ile Thr Phe Gly Cys Thr Asn Ser Gly Phe
 20 25 30
 Gln Asn Ala Asn Ser Arg Pro Cys Ile Leu Ser Met Asn Arg Met Ile
 35 40 45
 His Asp Cys Val Glu Arg Val Val Gly Asn Arg Leu Ala Thr Ala Val
 50 55 60
 Leu Ile Lys Gly Ser Leu Asp Pro His Ala Tyr Glu Met Val Lys Gly
 65 70 75 80
 Asp Lys Asp Lys Ile Ala Gly Ser Ala Val Ile Phe Cys Asn Gly Leu
 85 90 95
 Gly Leu Glu His Thr Leu Ser Leu Arg Lys His Leu Glu Asn Asn Pro
 100 105 110
 Asn Ser Val Lys Leu Gly Glu Arg Leu Ile Ala Arg Gly Ala Phe Val
 115 120 125
 Pro Leu Glu Glu Asp Gly Ile Cys Asp Pro His Ile Trp Met Asp Leu
 130 135 140
 Ser Ile Trp Lys Glu Ala Val Ile Glu Ile Thr Glu Val Leu Ile Glu
 145 150 155 160
 Lys Phe Pro Glu Trp Ser Ala Glu Phe Lys Ala Asn Ser Glu Glu Leu
 165 170 175
 Val Cys Glu Met Ser Ile Leu Asp Ser Trp Ala Lys Gln Cys Leu Ser
 180 185 190
 Thr Ile Pro Glu Asn Leu Arg Tyr Leu Val Ser Gly His Asn Ala Phe
 195 200 205
 Ser Tyr Phe Thr Arg Arg Tyr Leu Ala Thr Pro Glu Glu Val Ala Ser
 210 215 220
 Gly Ala Trp Arg Ser Arg Cys Ile Ser Pro Glu Gly Leu Ser Pro Glu
 225 230 235 240
 Ala Gln Ile Ser Val Arg Asp Ile Met Ala Val Val Asp Tyr Ile Asn
 245 250 255
 Glu His Asp Val Ser Val Val Phe Pro Glu Asp Thr Leu Asn Gln Asp
 260 265 270
 Ala Leu Lys Lys Ile Val Ser Ser Leu Lys Lys Ser His Leu Val Arg
 275 280 285
 Leu Ala Gln Lys Pro Leu Tyr Ser Asp Asn Val Asp Asp Asn Tyr Phe
 290 295 300
 Ser Thr Phe Lys His Asn Val Cys Leu Ile Thr Glu Glu Leu Gly Gly
 305 310 315 320
 Val Ala Leu Glu Cys Gln Arg
 325

<210> 516
 <211> 101
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 516

Met Asn Asn Arg Gln Asn Thr Asn Asp Phe Ile Arg Ile Val Lys Asp
 1 5 10 15
 Val Glu Lys Ala Phe Pro Glu Leu Asp Ile Lys Val Lys Ile Asp Lys
 20 25 30
 Glu Lys Val Thr Phe Leu Thr Ser Pro Thr Glu Leu Tyr His Lys Ser
 35 40 45
 Ile Ser Val Ile Leu Asn Leu Asn Ser Ile Glu Ser Ser Leu Asp
 50 55 60
 Leu Phe Pro Asp Ser Pro Val Val Glu Glu Leu Glu Lys Asn Asn Leu
 65 70 75 80
 Lys Leu Lys Lys Ala Leu Ile Met Leu Ile Leu Ser Arg Lys Asp Met
 85 90 95
 Phe Ser Lys Thr Glu
 100

<210> 517

<211> 261

<212> PRT

<213> Chlamydia pneumoniae

<400> 517

Met Lys Thr Ile Ala Phe Cys Ser Phe Lys Gly Gly Thr Gly Lys Thr
 1 5 10 15
 Thr Leu Ser Leu Asn Val Gly Cys Asn Leu Ala Gln Tyr Ser Asn Lys
 20 25 30
 Lys Val Leu Leu Val Asp Leu Asp Pro Gln Ala Asn Leu Thr Thr Gly
 35 40 45
 Leu Gly Val Gln Ser Cys Tyr Glu Ser Asn Leu Asn Asp Ile Phe Arg
 50 55 60
 Ser Ser Gly Asn Val Arg Asp Ile Ile Gln Asp Thr Lys Ile Glu Asn
 65 70 75 80
 Leu His Ile Val Pro Ser Ser Ile Leu Ile Glu Glu Phe Arg Glu Phe
 85 90 95
 Asn Arg Asn Ser Val Leu Asp Thr Ser His Leu Arg Ser Ser Leu Gln
 100 105 110
 Leu Ile Glu Ser Asn Tyr Asp Leu Cys Ile Leu Asp Thr Pro Pro Ser
 115 120 125
 Leu Gly Thr Leu Thr Glu Glu Ala Phe Ile Ala Ser Asp His Leu Ile
 130 135 140
 Val Cys Leu Thr Pro Glu Pro Phe Ser Ile Leu Gly Leu Gln Lys Ile
 145 150 155 160
 Lys Glu Phe Cys Ser Val Leu Pro Lys Lys Lys Asp Leu Ser Val Leu
 165 170 175
 Gly Ile Val Phe Ser Phe Trp Asp Gly Arg Asn Ser Thr Asn Ser Thr
 180 185 190
 Tyr Leu Asn Ile Ile Glu Ser Ile Tyr Glu Gly Lys Val Leu Ser Ser
 195 200 205
 Lys Val Arg Arg Asp Ile Thr Leu Ser Arg Ser Leu Leu Lys Glu Thr
 210 215 220
 Ser Ile Ala Asn Ala Tyr Pro Asn Ser Arg Ala Ser His Asp Ile Leu
 225 230 235 240
 Arg Leu Thr Lys Glu Ile Glu Asp Lys Leu Phe Asn Lys Glu Met Ser
 245 250 255
 Ala Gln Glu Val Leu
 260

<210> 518

<211> 526
 <212> PRT
 <213> Chlamydia pneumoniae

<400> 518

Met	Asn	Val	Leu	Lys	Tyr	Thr	Lys	His	Ser	Pro	Ser	Ala	His	Ala	Trp
1				5					10					15	
Lys	Leu	Ile	Gly	Thr	Ser	Pro	Lys	His	Gly	Ile	Tyr	Leu	Pro	Leu	Phe
			20					25					30		
Ser	Ile	His	Thr	Lys	Asn	Ser	Cys	Gly	Ile	Gly	Glu	Phe	Leu	Asp	Leu
		35					40					45			
Ile	Pro	Leu	Ile	Ser	Trp	Cys	Gln	Lys	Gln	Gly	Phe	Ser	Val	Ile	Gln
	50					55					60				
Leu	Leu	Pro	Leu	Asn	Asp	Thr	Gly	Glu	Asp	Thr	Ser	Pro	Tyr	Asn	Ser
65					70					75					80
Ile	Ser	Ser	Val	Ala	Leu	Asn	Pro	Leu	Phe	Leu	Ser	Leu	Ser	Ser	Leu
				85					90					95	
Pro	Asn	Ile	Asp	Thr	Ile	Pro	Glu	Val	Ala	Lys	Lys	Leu	Gln	Asp	Met
			100					105					110		
His	Glu	Leu	Cys	Ser	Thr	Pro	Ser	Val	Ser	Tyr	Thr	Gln	Val	Lys	Glu
		115					120					125			
Lys	Lys	Trp	Ala	Phe	Leu	Arg	Glu	Tyr	Tyr	Gln	Lys	Cys	Cys	Lys	Ser
	130						135				140				
Ser	Leu	Glu	Gly	Asn	Ser	Asn	Phe	Ser	Glu	Phe	Leu	Glu	Ser	Glu	Arg
145					150					155					160
Tyr	Trp	Leu	Tyr	Pro	Tyr	Gly	Thr	Phe	Arg	Ala	Ile	Lys	His	His	Met
				165					170					175	
His	Gly	Glu	Pro	Ile	Asn	Asn	Trp	Pro	Lys	Ser	Leu	Thr	Asp	Gln	Glu
			180					185					190		
Asn	Phe	Pro	Asp	Leu	Thr	Lys	Lys	Phe	His	Asp	Glu	Val	Leu	Phe	Phe
		195					200					205			
Ser	Tyr	Leu	Gln	Phe	Leu	Cys	Tyr	Gln	Gln	Leu	Cys	Glu	Val	Lys	Ala
	210					215					220				
Tyr	Ala	Asp	Gln	His	His	Val	Leu	Leu	Lys	Gly	Asp	Leu	Pro	Ile	Leu
225					230					235					240
Ile	Ser	Lys	Asp	Ser	Cys	Asp	Val	Trp	Tyr	Phe	Arg	Asp	Tyr	Phe	Ser
			245						250					255	
Ser	Ser	Arg	Ser	Val	Gly	Ala	Pro	Pro	Asp	Leu	Tyr	Asn	Ser	Glu	Gly
			260					265					270		
Gln	Asn	Trp	His	Leu	Pro	Ile	Tyr	Asn	Phe	Ser	Gln	Leu	Ala	Lys	Asp
		275					280					285			
Asp	Tyr	Ile	Trp	Trp	Lys	Glu	Arg	Leu	Arg	Tyr	Ala	Gln	Asn	Phe	Tyr
	290					295					300				
Ser	Val	Tyr	Arg	Leu	Asp	His	Ile	Ile	Gly	Phe	Phe	Arg	Leu	Trp	Ile
305					310					315					320
Trp	Asp	Ser	Ser	Gly	Arg	Gly	Arg	Phe	Ile	Pro	Asp	Asn	Pro	Lys	Asp
				325					330					335	
Tyr	Ile	Lys	Gln	Gly	Thr	Glu	Ile	Leu	Ser	Thr	Met	Leu	Gly	Ala	Ser
			340					345					350		
Ser	Met	Leu	Pro	Ile	Gly	Glu	Asp	Leu	Gly	Ile	Ile	Pro	Gln	Asp	Val
		355					360					365			
Lys	Thr	Thr	Leu	Thr	His	Leu	Gly	Ile	Cys	Gly	Thr	Arg	Ile	Pro	Arg
	370					375					380				
Trp	Glu	Arg	Asn	Trp	Glu	Ser	Asp	Ser	Ala	Phe	Ile	Pro	Leu	Lys	Asp
385					390					395					400
Tyr	Asn	Pro	Leu	Ser	Val	Thr	Thr	Leu	Ser	Thr	His	Asp	Ser	Asp	Thr
				405					410					415	

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<210> 519
<211> 147
<212> PRT
<213> Chlamydia pneumoniae
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<210> 520
<211> 635
<212> PRT
<213> Chlamydia pneumoniae
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<400> 520															
Met	Ile	Pro	Phe	Thr	Lys	Thr	Ile	Gly	Phe	Arg	Leu	Trp	Leu	Ala	Cys
1				5					10					15	
Ala	Val	Ala	Ile	Ile	Ala	Pro	Leu	Gly	Ile	Asn	Ile	Val	Trp	Leu	Asn
			20					25					30		
Leu	Asp	Gln	Tyr	Arg	Thr	Ile	Val	Ser	Ala	Ile	Ser	Thr	Ala	Leu	Lys
		35					40					45			
Glu	Asn	Ala	Ala	Phe	Lys	Ala	Asn	Thr	Leu	Thr	Gln	Ile	Val	Pro	Leu
	50					55					60				
Asn	Val	Asp	Val	Leu	Ser	Leu	Phe	Ser	Asp	Val	Leu	Asp	Leu	Asp	Ala

65					70					75					80
Gly	Ile	Pro	Glu	Thr	Pro	Asn	Val	Leu	Leu	Ser	Asn	Glu	Met	Gln	Lys
				85					90					95	
Val	Phe	Gln	Gly	Ile	Tyr	Asn	Glu	Ile	Ser	Leu	Ile	Lys	Val	Phe	Pro
			100					105					110		
Asn	Gly	Asp	Lys	Ile	Val	Val	Ala	Ser	Ser	Ile	Pro	Glu	His	Leu	Gly
		115					120					125			
Glu	Asn	Tyr	Asn	His	Lys	Ile	Asp	Ile	Pro	Lys	Asn	Thr	Pro	Phe	Leu
	130					135					140				
Ala	Ala	Leu	Lys	Gln	Ser	Pro	Lys	Asn	Gln	Glu	Val	Phe	Ser	Val	Met
145					150					155					160
Gln	Ala	Asn	Val	Phe	Asp	Ala	Lys	Thr	Gln	Glu	Leu	Gln	Gly	Ile	Leu
				165					170					175	
Tyr	Thr	Thr	Phe	Ser	Ala	Glu	Ser	Leu	Leu	Lys	Asp	Leu	Leu	Ile	Asn
			180					185					190		
Lys	Gln	Ser	Tyr	Leu	Thr	Val	Lys	Thr	Ala	Ile	Leu	Ser	Lys	Tyr	Gly
		195					200					205			
Val	Ile	Leu	Lys	Ala	Ser	Asp	Pro	Ala	Leu	His	Leu	His	Thr	Val	Tyr
	210					215					220				
Pro	Asp	Met	Thr	Lys	Glu	Lys	Phe	Cys	Gln	Val	Phe	Leu	Asn	Asp	Asp
225					230					235					240
Pro	Cys	Pro	Ile	Asp	Ser	Glu	Leu	Gly	Pro	Leu	Thr	Leu	Ser	Pro	Leu
				245					250					255	
Asp	Ile	Gly	Glu	Asn	Phe	Tyr	Ser	Phe	Lys	Ile	Lys	Asp	Thr	Glu	Ile
			260					265					270		
Trp	Gly	Cys	Ile	Glu	Asn	Val	Pro	Ser	Ile	Asp	Ile	Ala	Val	Leu	Ser
		275					280					285			
Tyr	Ala	Lys	Lys	Glu	Glu	Ser	Phe	Ala	Pro	Leu	Trp	Arg	Arg	Ala	Arg
	290					295					300				
Met	Tyr	Thr	Ala	Tyr	Phe	Cys	Ile	Leu	Leu	Gly	Ser	Leu	Ile	Ala	
305					310				315					320	
Phe	Ile	Val	Ala	Arg	Arg	Leu	Ser	Leu	Pro	Ile	Arg	Lys	Leu	Ala	Thr
				325					330					335	
Ala	Met	Ile	Glu	Ser	Arg	Lys	Asn	Lys	Asn	Cys	Leu	Tyr	Thr	Asp	Asp
			340					345					350		
Ser	Leu	Gly	Phe	Glu	Ile	Asn	Arg	Leu	Gly	His	Ile	Phe	Asn	Ala	Met
		355					360					365			
Val	Glu	Asn	Leu	His	Lys	Gln	Gln	His	Leu	Ala	Lys	Thr	Asn	Phe	Glu
	370					375					380				
Met	Lys	Glu	Asn	Ala	Gln	Asn	Ala	Leu	His	Leu	Gly	Glu	Gln	Ala	Gln
385					390					395					400
Gln	Arg	Leu	Leu	Pro	Asn	Thr	Leu	Pro	Ser	Tyr	Pro	His	Ile	Glu	Leu
				405					410					415	
Ala	Lys	Ala	Tyr	Ile	Pro	Ala	Ile	Thr	Val	Gly	Gly	Asp	Phe	Phe	Asp
			420					425					430		
Val	Phe	Val	Val	Gly	Glu	Gly	Ser	Lys	Ala	Arg	Leu	Phe	Leu	Ile	Val
		435					440					445			
Ala	Asp	Ala	Ser	Gly	Lys	Gly	Val	Asn	Ala	Cys	Gly	Tyr	Ser	Leu	Phe
	450					455					460				
Leu	Lys	Asn	Met	Leu	Arg	Thr	Phe	Leu	Ser	Arg	Ser	Ser	Ser	Leu	Gln
465					470					475					480
Gln	Ala	Ile	Gln	Glu	Thr	Ser	Arg	Leu	Phe	Tyr	Asn	Asn	Thr	Lys	Asn
				485					490					495	
Ser	Gly	Met	Phe	Val	Thr	Leu	Cys	Val	Tyr	Cys	Tyr	His	Gln	Thr	Ser
			500					505					510		
Asn	Thr	Met	Glu	Tyr	Tyr	Ser	Cys	Gly	His	Pro	Pro	Ala	Cys	Tyr	Leu
		515					520					525			

Asp Pro Asp Gly Glu Thr Ser Trp Leu Phe His Pro Gly Met Ala Leu
 530 535 540
 Gly Phe Leu Pro Glu Val Ala Asn Ile Thr Ser Lys Leu Phe His Pro
 545 550 555 560
 Lys Pro Gly Ser Leu Phe Val Leu Tyr Ser Asp Gly Ile Thr Glu Ala
 565 570 575
 His Asn Asn Asn Asn Asp Met Phe Gly Glu Glu Arg Leu Gln Ala Ala
 580 585 590
 Ile Gln Gly Leu Thr Gly Lys Ser Ala Ala Asp Ala Val His Arg Leu
 595 600 605
 Met Leu Ser Val Lys Thr Phe Val Gly Asn Ser His Gln His Asp Asp
 610 615 620
 Ile Thr Leu Leu Ile Leu Lys Val Leu Glu Ser
 625 630 635

<210> 521

<211> 314

<212> PRT

<213> Chlamydia pneumoniae

<400> 521

Met Phe Ser Tyr Ile Lys Asn Arg Ile Leu Phe Asn Leu Leu Ser Leu
 1 5 10 15
 Trp Ile Val Leu Thr Leu Thr Phe Leu Val Met Lys Thr Ile Pro Gly
 20 25 30
 Asp Pro Phe Asn Asp Glu Gly Cys Asn Val Leu Ser Glu Glu Val Leu
 35 40 45
 Gln Thr Leu Lys Ser Arg Tyr Gly Leu Asp Lys Pro Leu Tyr Gln Gln
 50 55 60
 Tyr Thr Gln Tyr Leu His Ser Ile Ala Lys Leu Asp Phe Gly Asn Ser
 65 70 75 80
 Leu Val Tyr Lys Asp Arg Lys Val Thr Asn Ile Ile Ser Thr Ala Phe
 85 90 95
 Pro Ile Ser Ala Ile Leu Gly Leu Gln Ser Leu Phe Leu Ser Ile Gly
 100 105 110
 Gly Gly Ile Ala Leu Gly Thr Ile Ala Ala Leu Lys Lys Lys Gln
 115 120 125
 Arg Arg Tyr Ile Leu Gly Ala Ser Ile Leu Gln Ile Ser Ile Pro Ala
 130 135 140
 Phe Ile Phe Ala Thr Leu Leu Gln Tyr Val Phe Ala Val Lys Ile Pro
 145 150 155 160
 Leu Leu Pro Ile Ala Cys Trp Gly Ser Phe Thr His Thr Ile Leu Pro
 165 170 175
 Thr Leu Ala Leu Ala Val Thr Pro Met Ala Phe Ile Ile Gln Leu Thr
 180 185 190
 Tyr Ser Ser Val Ser Ala Ala Leu Asn Lys Asp Tyr Val Leu Leu Ala
 195 200 205
 Tyr Ala Lys Gly Leu Ser Pro Leu Lys Val Val Ile Lys His Ile Leu
 210 215 220
 Pro Tyr Ala Ile Phe Pro Thr Ile Ser Tyr Ser Ala Phe Leu Thr Thr
 225 230 235 240
 Thr Val Ile Thr Gly Thr Phe Ala Ile Glu Asn Ile Phe Cys Ile Pro
 245 250 255
 Gly Leu Gly Lys Trp Phe Ile Cys Ser Ile Lys Gln Arg Asp Tyr Pro
 260 265 270
 Val Ala Leu Gly Leu Ser Val Phe Tyr Gly Thr Leu Phe Met Leu Ser
 275 280 285

Ser Leu Leu Ser Asp Leu Ile Gln Ser Ile Ile Asp Pro Gln Ile Arg
 290 295 300
 Tyr Ala His Gly Lys Glu Lys Lys Arg Lys
 305 310

<210> 522

<211> 1240

<212> PRT

<213> Chlamydia pneumoniae

<400> 522

Met Thr Trp Ile Pro Leu His Cys His Ser Gln Tyr Ser Val Leu Asp
 1 5 10 15
 Ala Met Ser Ser Ile Lys Asp Phe Val Ala Lys Gly Gln Glu Phe Gly
 20 25 30
 Ile Pro Ala Leu Ala Leu Thr Asp His Gly Asn Leu Tyr Gly Ala Val
 35 40 45
 Asp Phe Tyr Lys Glu Cys Thr Gln Lys Gly Ile Gln Pro Ile Ile Gly
 50 55 60
 Cys Glu Cys Tyr Ile Ala Pro Gly Ser Arg Phe Asp Lys Lys Lys Glu
 65 70 75 80
 Lys Arg Ser Arg Ala Ala His His Leu Ile Leu Leu Cys Lys Asn Glu
 85 90 95
 Gln Gly Tyr Arg Asn Leu Cys Ile Leu Thr Ser Leu Ala Phe Thr Glu
 100 105 110
 Gly Phe Tyr Tyr Phe Pro Arg Ile Asp Lys Asp Leu Leu Arg Gln Tyr
 115 120 125
 Ser Glu Gly Leu Ile Cys Leu Ser Gly Cys Leu Ser Ser Ser Val Ser
 130 135 140
 Asp Ala Ala Leu Lys Ser Pro Glu Ala Leu Leu Glu Leu Gln Trp
 145 150 155 160
 Phe Gln Asp Leu Phe Lys Asp Asp Tyr Phe Thr Glu Val Gln Leu His
 165 170 175
 Lys Met Ser Glu Glu Ser Ile Ala Gly Phe Lys Glu Glu Trp Leu Lys
 180 185 190
 Gln Glu Tyr Tyr Ser Leu Ile Glu Lys Gln Ile Lys Val Asn Thr Ala
 195 200 205
 Val Leu Glu Ala Ser Lys Arg Leu Gly Ile Pro Thr Val Ala Thr Asn
 210 215 220
 Asp Ile His Tyr Ile Asn Ala Asn Asp Trp Gln Ala His Glu Ile Leu
 225 230 235 240
 Leu Asn Val Gln Ser Gly Glu Thr Val Arg Ile Ala Lys Gln Asn Thr
 245 250 255
 His Ile Pro Asn Pro Lys Arg Lys Val Tyr Arg Ser Arg Glu Tyr Tyr
 260 265 270
 Phe Lys Ser Pro Ala Gln Met Ala Glu Leu Phe Lys Asp Ile Pro Glu
 275 280 285
 Val Ile Ser Asn Thr Leu Glu Val Ala Lys Arg Cys Asp Phe Thr Phe
 290 295 300
 Asp Phe Ser Lys Lys His Tyr Pro Ile Tyr Val Pro Glu Ser Leu Lys
 305 310 315 320
 Thr Leu Asn Ser Tyr Thr Glu Glu Asp Arg Tyr Gln Ala Ser Ala Val
 325 330 335
 Phe Leu Lys Gln Leu Ala Glu Glu Ala Leu Pro Lys Lys Tyr Ser Ser
 340 345 350
 Glu Val Leu Ala His Ile Ala Lys Lys Phe Pro His Arg Asp Pro Ile
 355 360 365

Asp Ile Val Lys Glu Arg Met Asp Met Glu Met Ala Ile Ile Ile Pro
 370 375 380
 Lys Gly Met Cys Asp Tyr Leu Leu Ile Val Trp Asp Ile Ile His Trp
 385 390 395 400
 Ala Lys Ala Asn Gly Ile Pro Val Gly Pro Gly Arg Gly Ser Gly Ala
 405 410 415
 Gly Ser Val Leu Leu Phe Leu Leu Gly Ile Thr Glu Ile Glu Pro Ile
 420 425 430
 Arg Phe Asp Leu Phe Phe Glu Arg Phe Ile Asn Pro Glu Arg Leu Ser
 435 440 445
 Tyr Pro Asp Ile Asp Ile Asp Ile Cys Met Ala Gly Arg Glu Arg Val
 450 455 460
 Ile Asn Tyr Ala Ile Glu Arg His Gly Lys Asp Asn Val Ala Gln Ile
 465 470 475 480
 Ile Thr Phe Gly Thr Met Lys Ala Lys Met Ala Val Lys Asp Val Gly
 485 490 495
 Arg Thr Leu Asp Met Ala Leu Ser Lys Val Asn His Ile Ala Lys His
 500 505 510
 Ile Pro Asp Leu Asn Thr Thr Leu Ser Lys Ala Leu Glu Thr Asp Pro
 515 520 525
 Asp Leu His Gln Leu Tyr Ile Asn Asp Ala Glu Ser Ala Gln Val Ile
 530 535 540
 Asp Met Ala Leu Cys Leu Glu Gly Ser Ile Arg Asn Thr Gly Val His
 545 550 555 560
 Ala Ala Gly Val Ile Ile Cys Gly Asp Gln Leu Thr Asn His Ile Pro
 565 570 575
 Ile Cys Ile Ser Lys Asp Ser Thr Met Ile Thr Thr Gln Tyr Ser Met
 580 585 590
 Lys Pro Val Glu Ser Val Gly Met Leu Lys Val Asp Leu Leu Gly Leu
 595 600 605
 Lys Thr Leu Thr Ser Ile Asn Ile Ala Met Ser Ala Ile Glu Lys Lys
 610 615 620
 Thr Gly Gln Ser Leu Ala Met Ala Thr Leu Pro Leu Asp Asp Ala Thr
 625 630 635 640
 Thr Phe Ser Leu Leu His Gln Gly Lys Thr Met Gly Ile Phe Gln Met
 645 650 655
 Glu Ser Lys Gly Met Gln Glu Leu Ala Lys Asn Leu Arg Pro Asp Leu
 660 665 670
 Phe Glu Glu Ile Ile Ala Met Gly Ala Leu Tyr Arg Pro Gly Pro Met
 675 680 685
 Asp Met Ile Pro Ser Phe Ile Asn Arg Lys His Gly Lys Glu Ile Ile
 690 695 700
 Glu Tyr Asp His Pro Leu Met Glu Ser Ile Leu Lys Glu Thr Tyr Gly
 705 710 715 720
 Ile Met Val Tyr Gln Glu Gln Val Met Gln Ile Ala Gly Ala Leu Ala
 725 730 735
 Ser Tyr Ser Leu Gly Glu Gly Asp Val Leu Arg Arg Ala Met Gly Lys
 740 745 750
 Lys Asp Phe Gln Gln Met Glu Gln Glu Arg Glu Lys Phe Cys Lys Arg
 755 760 765
 Ala Cys Asn Asn Gly Ile Asp Pro Glu Leu Ala Thr Val Ile Phe Asp
 770 775 780
 Lys Met Glu Lys Phe Ala Tyr Gly Phe Asn Lys Ser His Ala Ala
 785 790 795 800
 Ala Tyr Gly Leu Ile Thr Tyr Thr Thr Ala Tyr Leu Lys Ala Asn Tyr
 805 810 815
 Pro Lys Glu Trp Leu Ala Ala Leu Leu Thr Cys Asp Ser Asp Asp Ile

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<210> 523
<211> 576
<212> PRT
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<400> 523

Met 1	Thr	Asp	Phe	Pro 5	Thr	His	Phe	Lys	Gly 10	Pro	Lys	Leu	Asn 15	Ile
Lys	Val	Asn	Pro 20	Asn	Phe	Phe	Glu	Arg 25	Asn	Pro	Lys	Val	Ala 30	Arg Val
Leu	Gln	Ile 35	Thr	Ala	Val	Val	Leu 40	Gly	Ile	Ile	Ala	Leu 45	Leu	Ser Gly
Ile	Val 50	Leu	Ile	Ile	Gly	Thr 55	Pro	Leu	Gly	Ala	Pro 60	Ile	Ser	Met Ile
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Thr	Ile	Ala	Thr 85	Ile	Leu	Gln	Ala	Arg 90	Asn	Ser	Tyr	Lys	Lys 95	Ala Val
Asn	Gln	Lys	Lys 100	Leu	Ser	Glu	Pro	Leu 105	Met	Glu	Arg	Pro	Glu 110	Leu Lys
Ala	Leu	Asp 115	Tyr	Ser	Leu	Asp	Leu 120	Lys	Glu	Val	Trp	Asp 125	Leu	His His
Ser	Val 130	Val	Lys	His	Leu	Lys 135	Lys	Leu	Asp	Leu	Asn 140	Leu	Ser	Lys Thr
Gln 145	Arg	Glu	Val	Leu 150	Asn	Gln	Ile	Lys	Ile	Asp 155	Asp	Glu	Gly	Pro Ser 160
Leu	Gly	Glu	Cys 165	Ala	Ala	Met	Ile	Ser	Glu 170	Asn	Tyr	Asp	Ala Cys 175	Leu
Lys	Met	Leu 180	Ala	Tyr	Arg	Glu	Glu 185	Leu	Leu	Lys	Glu	Gln 190	Thr	Gln Tyr
Gln 195	Glu	Thr	Arg	Phe	Asn	Gln	Asn 200	Leu	Thr	His	Arg	Asn 205	Lys	Val Leu
Leu 210	Ser	Ile	Leu	Ser	Arg	Ile 215	Thr	Asp	Asn	Ile	Ser 220	Lys	Ala	Gly Gly
Val 225	Phe	Ser	Leu	Lys	Phe	Ser	Thr	Leu	Ser	Ser 235	Arg	Met	Ser	Arg Ile 240
His	Thr	Thr	Thr 245	Thr	Val	Ile	Leu	Ala 250	Leu	Ser	Ala	Val	Val Ser 255	Val
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Leu	Leu	Ala 275	Val	Ala	Ile	Ser	Ala 280	Gly	Val	Ile	Val	Thr 285	Gly	Leu Ser
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Lys	Glu	Glu 340	Glu	Glu	Val	Ser	Leu	Glu 345	Gly	Gln	Asp	Trp	Tyr 350	Thr Gln
Tyr	Ile 355	Thr	Asn	Ala	Pro	Ile	Glu 360	Lys	Arg	Leu	Ile 365	Glu	Glu	Ile Arg
Val	Thr 370	Tyr	Lys	Glu	Ile	Asp 375	Ala	Gln	Thr	Lys	Lys 380	Met	Lys	Thr Asp
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Ser	Pro	Ser	Glu 405	Asp	Pro	Ser	Glu	Thr 410	Pro	Ile	Phe	Thr	Gln Gly 415	Lys
Glu	Phe	Ala	Lys 420	Leu	Arg	Arg	Gln	Thr 425	Ser	Gln	Asn	Ile Ser 430	Thr	Ile

Tyr Gly Pro Asp Asn Glu Asn Ile Asp Pro Glu Phe Ser Leu Pro Trp
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 Gln Leu Ser Ser Val Arg Lys Trp Arg His Pro Arg Gly Glu His Tyr
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 Tyr Thr Pro Lys Pro Glu Leu Arg Ala Thr Leu Val Pro Asn Ser Leu
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 130 135 140
 Gly Asn Ala Phe His Gln Asp Lys Gln Lys Glu Asn Ala Gly Phe Arg
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 Leu Ile Ser Arg Gly Tyr Ile Val Gly Gly Ser Met Thr Thr Pro Gln
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 Glu Tyr Thr Phe Ala Val Ala Phe Ser Gln Leu Phe Gly Lys Ser Lys
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 Asp Tyr Val Val Ser Asp Ile Lys Ser Gln Val Tyr Ala Gly Ser Leu
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 Cys Ala Gln Ser Ser Tyr Val Ile Pro Leu His Ser Ser Leu Arg Arg

210 215 220
 His Val Leu Ser Lys Val Leu Pro Glu Leu Pro Gly Glu Thr Pro Leu
 225 230 235 240
 Val Leu His Gly Gln Val Ser Tyr Gly Arg Asn His His Asn Met Thr
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 Thr Lys Leu Ala Asn Asn Thr Gln Gly Lys Ser Asp Trp Asp Ser His
 260 265 270
 Ser Phe Ala Val Glu Val Gly Gly Ser Leu Pro Val Asp Leu Asn Tyr
 275 280 285
 Arg Tyr Leu Thr Ser Tyr Ser Pro Tyr Val Lys Leu Gln Val Val Ser
 290 295 300
 Val Asn Gln Lys Gly Phe Gln Glu Val Ala Ala Asp Pro Arg Ile Phe
 305 310 315 320
 Asp Ala Ser His Leu Val Asn Val Ser Ile Pro Met Gly Leu Thr Phe
 325 330 335
 Lys His Glu Ser Ala Lys Pro Pro Ser Ala Leu Leu Leu Thr Leu Gly
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 Tyr Ala Val Asp Ala Tyr Arg Asp His Pro His Cys Leu Thr Ser Leu
 355 360 365
 Thr Asn Gly Thr Ser Trp Ser Thr Phe Ala Thr Asn Leu Ser Arg Gln
 370 375 380
 Ala Phe Phe Ala Glu Ala Ser Gly His Leu Lys Leu Leu His Gly Leu
 385 390 395 400
 Asp Cys Phe Ala Ser Gly Ser Cys Glu Leu Arg Ser Ser Ser Arg Ser
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 Tyr Asn Ala Asn Cys Gly Thr Arg Tyr Ser Phe Xaa Xaa Xaa Xaa Xaa
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<210> 527

<211> 1650

<212> DNA

<213> C. Trachomatis D serovar

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<213> C. Trachomatis D serovar
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<211> 1938
<212> DNA
<213> C. Trachomatis D serovar
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<212> DNA

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<212> DNA

<213> C. Trachomatis D serovar

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<210> 535

<211> 1617

<212> DNA

<213> C. Trachomatis D serovar

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<210> 536

<211> 312

<212> DNA

<213> C. Trachomatis D serovar

<400> 536

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<211> 1008

<212> DNA

<213> C. Trachomatis D serovar

<400> 537

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<210> 538

<211> 1278

<212> DNA

<213> C. Trachomatis D serovar

<400> 538

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<210> 539

<211> 1815

<212> DNA

<213> C. Trachomatis D serovar

<400> 539

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<210> 540

<211> 519

<212> DNA

<213> C. Trachomatis D serovar

<400> 540

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<210> 541
 <211> 1062
 <212> DNA
 <213> C. Trachomatis D serovar

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<210> 542
 <211> 1263
 <212> DNA
 <213> C. Trachomatis D serovar

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<210> 543
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 <212> DNA

<213> C. Trachomatis D serovar

<400> 543

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<210> 544

<211> 729

<212> DNA

<213> C. Trachomatis D serovar

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<210> 545

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<212> DNA

<213> C. Trachomatis D serovar

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<210> 546

<211> 579

<212> DNA

<213> C. Trachomatis D serovar

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<210> 547

<211> 3159

<212> DNA

<213> C. Trachomatis D serovar

<400> 547

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<210> 548

<211> 1038

<212> DNA

<213> C. Trachomatis D serovar

<400> 548

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<210> 549

<211> 978

<212> DNA

<213> C. Trachomatis D serovar

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<210> 552

<211> 1950

<212> DNA

<213> C. Trachomatis D serovar

<400> 552

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<210> 553

<211> 939

<212> DNA

<213> C. Trachomatis D serovar

<400> 553

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<212> DNA

<213> C. Trachomatis D serovar

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<211> 1689

<212> DNA

<213> C. Trachomatis D serovar

<400> 555

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<210> 556

<211> 5253

<212> DNA

<213> C. Trachomatis D serovar

<400> 556

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<210> 557

<211> 792

<212> DNA

<213> C. Trachomatis D serovar

<400> 557

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<210> 558
<211> 306
<212> DNA
<213> C. Trachomatis D serovar

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gaaaactcct taggattatt cccagactct cctgttcttg aaaaattaga ggataacagt 240
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gctgaa 306

<210> 559
<211> 729
<212> DNA
<213> C. Trachomatis D serovar

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cgtgaattct taagttcggg cggaaaaacct gaagaagaac acattcttgg aatagctttg 480
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<210> 560
<211> 289
<212> PRT
<213> C. Trachomatis D serovar

<400> 560
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20 25 30
Leu Leu Leu Thr Asn Phe Ala Tyr Val Asp Val Phe Ala Glu Ile
35 40 45
Tyr Gln Val Pro Val Ser Arg Gly Ser Met Phe Ser Ala Ala His Ala

50 55 60
 Pro Gln Ile His Thr Ser Ile Ile Asp Phe Lys Leu Gly Ser Pro Gly
 65 70 75 80
 Ala Ala Leu Thr Val Asp Leu Cys Ser Phe Leu Pro Asn Ala Thr Ala
 85 90 95
 Ala Ile Met Leu Gly Met Cys Gly Gly Leu Arg Ser His Tyr Gln Ile
 100 105 110
 Gly Asp Tyr Phe Val Pro Val Ala Ser Ile Arg Lys Asp Gly Thr Ser
 115 120 125
 Asp Ala Tyr Phe Pro Pro Glu Val Pro Ala Leu Ala Asn Phe Val Val
 130 135 140
 Gln Lys Met Ile Thr Asn Ile Leu Glu Ala Lys Asn Leu Pro Tyr His
 145 150 155 160
 Ile Gly Ile Thr His Thr Thr Asn Ile Arg Phe Trp Glu Phe Asn Lys
 165 170 175
 Glu Phe Arg Arg Lys Leu Tyr Glu Asn Lys Ala Gln Thr Val Glu Met
 180 185 190
 Glu Cys Ala Thr Leu Phe Ala Ala Gly Tyr Arg Arg Asn Leu Pro Leu
 195 200 205
 Gly Ala Leu Leu Leu Ile Ser Asp Leu Pro Leu Arg Lys Asp Gly Ile
 210 215 220
 Lys Thr Lys Glu Ser Ser Ala Val Leu Asn Ser His Thr Lys Glu
 225 230 235 240
 His Ile Leu Thr Gly Val Glu Val Phe Ala Ser Leu Gln Glu Lys Ser
 245 250 255
 Gly Pro Gly Ile Lys Lys Thr Lys Gly Leu Pro His Met Glu Phe Gly
 260 265 270
 Gln Ala Asp Asp Ser Leu Ser Glu Gln Thr Glu Val Ser Gly Gly Asp
 275 280 285
 Phe

<210> 561

<211> 394

<212> PRT

<213> C. Trachomatis D serovar

<400> 561

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 35 40 45
 Ser Ile Asp Asn Thr Pro Glu Lys Ala Arg Gly Ile Thr Ile Asn
 50 55 60
 Ala Ser His Val Glu Tyr Glu Thr Ala Asn Arg His Tyr Ala His Val
 65 70 75 80
 Asp Cys Pro Gly His Ala Asp Tyr Val Lys Asn Met Ile Thr Gly Ala
 85 90 95
 Ala Gln Met Asp Gly Ala Ile Leu Val Val Ser Ala Thr Asp Gly Ala
 100 105 110
 Met Pro Gln Thr Lys Glu His Ile Leu Leu Ala Arg Gln Val Gly Val
 115 120 125
 Pro Tyr Ile Val Val Phe Leu Asn Lys Ile Asp Met Ile Ser Glu Glu
 130 135 140
 Asp Ala Glu Leu Val Asp Leu Val Glu Met Glu Leu Val Glu Leu Leu

145 150 155 160
 Cys Gly Ala Asp Tyr Glu Ala Arg Asp Leu Lys Glu Pro Arg Ser Lys
 165 170 175
 Leu Thr Gly Ala Ala Leu Ser Leu Arg Asp Thr Glu His Ala Tyr Leu
 180 185 190
 His Leu Glu Arg Met Lys Glu Asp Leu Leu Ala Phe Val Gln Gly Ile
 195 200 205
 Tyr Leu Arg Pro His Met Arg Asn Phe Val Thr Asp Tyr Ile Glu His
 210 215 220
 Leu Arg Pro Arg Ala Val Thr Arg Asp Leu Ser Trp Gly Ile Pro Val
 225 230 235 240
 Pro Asp Leu Glu Asn Lys Val Phe Tyr Val Trp Phe Asp Ala Pro Ile
 245 250 255
 Gly Tyr Ile Ser Gly Thr Met Asp Trp Ala Ala Ser Ile Gly Asp Pro
 260 265 270
 Glu Ala Trp Lys Lys Phe Trp Leu Asp Asp Thr Val Thr Tyr Ala Gln
 275 280 285
 Phe Ile Gly Lys Asp Asn Thr Ser Phe His Ala Ala Ile Phe Pro Ala
 290 295 300
 Met Glu Ile Gly Gln Ser Leu Pro Tyr Lys Lys Val Asp Ala Leu Val
 305 310 315
 Thr Ser Glu Phe Leu Leu Glu Gly Phe Gln Phe Ser Lys Ser Asp
 325 330 335
 Gly Asn Phe Ile Asp Met Asp Ala Phe Leu Glu Thr Tyr Ser Leu Asp
 340 345 350
 Lys Leu Arg Tyr Val Leu Ala Ala Ile Ala Pro Glu Thr Ser Asp Ser
 355 360 365
 Glu Phe Ser Phe Gln Glu Phe Lys Thr Arg Cys Asn Ser Glu Leu Val
 370 375 380
 Gly Lys Tyr Gly Asn Phe Val Asn Arg Val Leu Ala Phe Ala Val Lys
 385 390 395
 Asn Gly Cys Thr Glu Leu Ser Ser Pro Gln Leu Glu Gln Lys Asp Leu
 405 410 415
 Asp Phe Ile Ser Lys Ser Gln Lys Leu Ala Lys Asp Ala Ala Glu His
 420 425 430
 Tyr Ala Gln Tyr Ser Leu Arg Lys Ala Cys Ser Thr Ile Met Glu Leu
 435 440 445
 Ala Ala Leu Gly Asn Gly Tyr Phe Asn Asp Glu Ala Pro Trp Lys Leu
 450 455 460
 Ala Lys Glu Gly Asn Trp Asn Arg Val Arg Ala Ile Leu Phe Cys Ala
 465 470 475 480
 Cys Tyr Cys Gln Lys Leu Leu Ala Leu Ile Ser Tyr Pro Ile Met Pro
 485 490 495
 Glu Thr Ala Leu Lys Ile Leu Glu Met Ile Ala Pro His Ser Leu Asp
 500 505 510
 Leu Gly Ser Gln Asp Pro Asp Arg Leu Gln Ser Leu Trp Thr Asp Ser
 515 520 525
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 Leu Phe Thr Met Val Glu
 545 550

<210> 563

<211> 100

<212> PRT

<213> C. Trachomatis D serovar

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 35 40 45
 Met Asp Leu Glu Arg Glu Arg Gly Ile Thr Ile Lys Ala His Pro Val
 50 55 60
 Thr Met Thr Tyr Glu Tyr Glu Gly Glu Thr Tyr Glu Leu Asn Leu Ile
 65 70 75 80
 Asp Thr Pro Gly His Val Asp Phe Ser Tyr Glu Val Ser Arg Ser Leu
 85 90 95
 Ala Ala Cys Glu Gly Ala Leu Leu Ile Val Asp Ala Ala Gln Gly Val
 100 105 110
 Gln Ala Gln Ser Leu Ala Asn Val Tyr Leu Ala Leu Glu Arg Asp Leu
 115 120 125
 Glu Ile Ile Pro Val Leu Asn Lys Ile Asp Leu Pro Ala Ala Gln Pro
 130 135 140
 Glu Ala Ile Lys Lys Gln Ile Glu Glu Phe Ile Gly Leu Asp Thr Ser
 145 150 155 160
 Asn Thr Ile Ala Cys Ser Ala Lys Thr Gly Gln Gly Ile Pro Glu Ile
 165 170 175
 Leu Glu Ser Ile Ile Arg Leu Val Pro Pro Pro Lys Pro Pro Gln Glu
 180 185 190
 Thr Glu Leu Lys Ala Leu Ile Phe Asp Ser His Tyr Asp Pro Tyr Val
 195 200 205
 Gly Ile Met Val Tyr Val Arg Val Ile Ser Gly Glu Ile Lys Lys Gly
 210 215 220
 Asp Arg Ile Thr Phe Met Ala Thr Lys Gly Ser Ser Phe Glu Val Leu
 225 230 235 240
 Gly Ile Gly Ala Phe Leu Pro Glu Ala Thr Leu Met Glu Gly Ser Leu
 245 250 255
 Arg Ala Gly Gln Val Gly Tyr Phe Ile Ala Asn Leu Lys Lys Val Lys
 260 265 270
 Asp Val Lys Ile Gly Asp Thr Val Thr Thr Val Lys His Pro Ala Lys
 275 280 285
 Glu Pro Leu Glu Gly Phe Lys Glu Ile Lys Pro Val Val Phe Ala Gly
 290 295 300
 Ile Tyr Pro Ile Asp Ser Ser Asp Phe Asp Thr Leu Lys Asp Ala Leu
 305 310 315 320
 Gly Arg Leu Gln Leu Asn Asp Ser Ala Leu Thr Ile Glu Gln Glu Asn
 325 330 335
 Ser His Ser Leu Gly Phe Gly Phe Arg Cys Gly Phe Leu Gly Leu Leu
 340 345 350
 His Leu Glu Ile Ile Phe Glu Arg Ile Ser Arg Glu Phe Asp Leu Asp
 355 360 365
 Ile Ile Ala Thr Ala Pro Ser Val Ile Tyr Lys Val Val Leu Lys Asn
 370 375 380
 Gly Lys Thr Leu Phe Ile Asp Asn Pro Thr Ala Tyr Pro Asp Pro Ala
 385 390 395 400
 Leu Ile Glu His Met Glu Glu Pro Trp Val His Val Asn Ile Ile Thr
 405 410 415
 Pro Gln Glu Tyr Leu Ser Asn Ile Met Ser Leu Cys Met Asp Lys Arg
 420 425 430
 Gly Ile Cys Leu Lys Thr Asp Met Leu Asp Gln His Arg Leu Val Leu
 435 440 445
 Ser Tyr Glu Leu Pro Leu Asn Glu Ile Val Ser Asp Phe Asn Asp Lys
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 Leu Lys Ser Val Thr Lys Gly Tyr Gly Ser Phe Asp Tyr Arg Leu Gly


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<210> 567
<211> 646
<212> PRT
<213> C. Trachomatis D serovar
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Gln	Ala	Glu 35	Ile	Phe	Ser	Leu	Gly 40	Leu	Ile	Ala	Lys 45	Thr	Gly	Pro	Asp
Thr	Phe 50	Leu	Leu	Phe	Gly 55	Lys	Gln	Glu	Gly	Ala	Ser 60	Leu	Val	Lys	Arg
Lys 65	Glu	Leu	Ser	Lys 70	Asp	Gln	Leu	Leu	Glu	Gln 75	Trp	Asp	Asn	Ile 80	Val
Gly	Glu	Gly	Asp 85	Thr	Leu	Ser	Leu	Pro	Gln 90	Ala	Asn	Ala	Tyr 95	Ile	Ala
Lys	His	Ser	Gly 100	Gly	Ser	Gln	Ser	Ile 105	Thr	Lys	Arg	Leu	Ser 110	Ala	Tyr
Leu	Ser	Gly 115	Cys	Phe	Asp	Phe	Ser	Arg 120	Leu	Gln	Cys	Leu	Ala 125	Leu	Phe
Leu	Val 130	Val	Val	Ala	Ile	Leu	Lys 135	Ser	Thr	Thr	Leu 140	Phe	Phe	Gln	Arg
Phe 145	Leu	Ala	Gln	Leu	Ile 150	Ala	Ile	Arg	Val	Ser 155	Cys	Ser	Leu	Arg	Lys 160
Asp	Tyr	Phe	Leu	Ala 165	Leu	Gln	Thr	Leu	Pro 170	Met	Thr	Phe	Phe	His 175	Ala
His	Asp	Met	Gly 180	Asn	Leu	Ser	Ser	Arg 185	Val	Ile	Ala	Asp	Ser 190	Ser	Met
Ile	Ala	Leu 195	Ala	Ile	Asn	Ala	Leu 200	Met	Val	Asn	Tyr	Ile 205	Gln	Ala	Pro
Ile	Thr 210	Met	Thr	Leu	Ala	Leu	Val 215	Val	Cys	Leu	Ser 220	Ile	Ser	Trp	Lys
Phe 225	Cys	Ala	Cys	Val	Cys 230	Leu	Ala	Phe	Pro	Ile 235	Phe	Ile	Leu	Pro	Ile 240
Val	Ile	Ile	Ala	Lys 245	Lys	Val	Lys	Ala	Leu 250	Ala	Lys	Arg	Ile	Gln	Lys 255
Ser	Gln	Asp	His 260	Ser	Ala	Ala	Ala	Leu 265	Leu	Asp	Phe	Leu	Leu 270	Gly	Ile
Leu	Thr 275	Val	Lys	Val	Phe	Arg	Thr 280	Glu	Gln	Phe	Ser	Phe	Ser 285	Lys	Tyr
Cys	Gln 290	Lys	Asn	Asp	Glu	Ile	Ala 295	Arg	Leu	Glu	Glu	Arg	Ser	Ala	Ala
Tyr 305	Ser	Leu	Ile	Pro	Arg	Pro	Leu	Leu	His	Thr 315	Ile	Ala	Ser	Leu	Phe
Phe	Ala	Leu	Val	Ile	Met	Ile	Gly	Leu	Tyr	His	Phe	His	Ile	Pro	Pro

325 330 335
 Glu Glu Leu Val Val Phe Cys Gly Leu Leu Tyr Leu Ile Tyr Asp Pro
 340 345 350
 Ile Lys Lys Phe Ala Asp Glu Asn Ala Asn Ile Met Trp Gly Cys Ala
 355 360 365
 Ala Ala Glu Arg Phe Tyr Glu Val Leu Asp Leu Ala Lys Gln Gln Ser
 370 375 380
 Asn Val Ser Glu Lys Leu Asn Glu Phe Gln Gly Leu Gln His Ser Ile
 385 390 395 400
 Gln Phe Cys Asn Val Ser Phe Gly Tyr Val Glu Asp Ser Pro Val Leu
 405 410 415
 Ser Asp Phe Asn Leu Val Leu Lys Lys Gly Glu Ala Ile Gly Ile Val
 420 425 430
 Gly Pro Thr Gly Ser Gly Lys Ser Thr Ile Ala Lys Leu Leu Pro Arg
 435 440 445
 Leu Tyr Glu Val Ser His Gly Glu Leu Leu Ile Asp Ser Leu Pro Ile
 450 455 460
 Arg Ser Tyr Cys Lys Asn Ser Leu Arg Lys His Ile Gly Cys Val Leu
 465 470 475 480
 Gln His Pro Phe Leu Phe Tyr Asp Thr Val Trp Asn Asn Leu Thr Cys
 485 490 495
 Gly Arg Thr Phe Ser Glu Glu Glu Val Phe His Ala Leu Lys Gln Ala
 500 505 510
 His Ala Tyr Glu Phe Val Ser Lys Met Pro Gln Gly Val His Ser Leu
 515 520 525
 Leu Glu Glu Ser Ser Lys Asn Leu Ser Gly Gly Gln Gln Gln Arg Leu
 530 535 540
 Thr Ile Ala Arg Ala Leu Leu His Asn Thr Ser Ile Leu Leu Leu Asp
 545 550 555 560
 Glu Ala Thr Ser Ala Leu Asp Ala Ile Ser Glu Asn Tyr Val Lys Glu
 565 570 575
 Ile Val Gly Gln Leu Lys Gly Arg Cys Thr Gln Ile Ile Ile Ala His
 580 585 590
 Lys Leu Ser Thr Leu Glu Tyr Val Asp Arg Ile Val Tyr Leu Glu Gln
 595 600 605
 Gly Lys Lys Ile Ala Glu Gly Thr Lys Glu Glu Leu Leu Asp Ser Cys
 610 615 620
 Pro Ala Phe Gln Arg Met Trp Val Leu Ser Gly Ala Lys Asp Trp Glu
 625 630 635 640
 Leu Asn Ala Val Val Lys
 645

<210> 568

<211> 414

<212> PRT

<213> C. Trachomatis D serovar

<400> 568

Met Phe Ser Ser Ala Ile Val Ile Leu Thr Ala Ile Phe Val Leu Cys
 1 5 10 15
 Ser Gly Phe Val Ser Leu Ser His Ile Ala Leu Phe Ser Leu Pro Ser
 20 25 30
 Ser Leu Ile Ala His Tyr Ser His Ser Lys Asn Arg Gln Leu Arg Gln
 35 40 45
 Ile Ala Asn Leu Met Ala Tyr Pro Asn His Leu Leu Met Thr Leu Val
 50 55 60
 Phe Phe Asp Ile Gly Ile Asn Ile Gly Val Gln Asn Cys Ile Ala Thr

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<210> 569
<211> 404
<212> PRT
<213> C. Trachomatis D serovar
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<400> 569															
Met	Glu	Thr	Asn	Ser	Pro	Phe	Phe	Trp	Leu	Gly	Val	Asn	Leu	Leu	Cys
1				5					10					15	
Ile	Phe	Val	Gln	Gly	Phe	Phe	Ser	Met	Met	Glu	Met	Ala	Cys	Ile	Ser
			20					25					30		
Phe	Asn	Arg	Val	Arg	Leu	Gln	Tyr	Tyr	Leu	Thr	Lys	Ser	Asn	Lys	Lys
		35					40					45			
Ala	Ser	Tyr	Ile	Asn	Phe	Leu	Val	Arg	Arg	Pro	Tyr	Arg	Leu	Phe	Gly

50 55 60
 Thr Val Met Leu Gly Val Asn Ile Ala Leu Gln Ile Gly Ser Glu Ser
 65 70 75 80
 Ser Arg Thr Cys Tyr Lys Leu Leu Gly Ile Ser Pro Glu Tyr Ala Pro
 85 90 95
 Ala Thr Gln Ile Ile Leu Val Val Ile Phe Ala Glu Leu Ile Pro Leu
 100 105 110
 Ala Ile Ser Arg Lys Ile Pro Glu Lys Ile Ala Leu Lys Gly Ala Pro
 115 120 125
 Ile Leu Tyr Phe Ala His Tyr Leu Phe Tyr Pro Leu Ile Gln Cys Val
 130 135 140
 Gly Gly Ile Thr Asn Met Ile Tyr Phe Ile Leu Asn Ile Lys Glu Glu
 145 150 155 160
 Thr Leu His Ser Thr Leu Ser Arg Asp Glu Leu Gln Lys Thr Leu Glu
 165 170 175
 Thr His His Glu Glu His Asp Phe Asn Val Ile Ala Thr Asn Ile Phe
 180 185 190
 Ser Leu Ser Ala Thr Ser Val Glu Gln Val Cys Gln Tyr Leu Asp Gln
 195 200 205
 Ile Pro Ile Leu Ser Ala Thr Ala Ser Val Arg Asp Val Cys Gln Leu
 210 215 220
 Val Arg Arg His Arg Leu Asp Phe Val Pro Val Tyr His Lys Val Lys
 225 230 235 240
 Lys Asn Val Val Gly Ile Ala Phe Pro Lys Asn Leu Ile Asn Arg Asn
 245 250 255
 Pro Ser Asp Pro Val Val Pro Tyr Leu Ser Ser Pro Trp Phe Ile Thr
 260 265 270
 Ala Lys Ser Lys Leu Ile His Ala Ile Gln Glu Phe Arg Lys Asn Ser
 275 280 285
 Ser Asn Val Ala Ile Val Leu Asn Asn Asn Gly Glu Pro Met Gly Val
 290 295 300
 Leu Gly Leu His Thr Val Phe Lys Thr Leu Phe Asn Thr Arg Asn Ile
 305 310 315 320
 Ala Gln Leu Lys Pro Lys Pro Thr Ser Leu Ile Glu Arg Thr Phe Ser
 325 330 335
 Gly Asn Thr Pro Leu Ser Glu Ile Glu Asn Glu Leu Asp Ile Ile Phe
 340 345 350
 Met Asp Asn Asp Cys Thr Thr Ile Glu Gln Leu Met Leu Lys Leu Leu
 355 360 365
 Asp Thr Pro Pro Glu Val Gly Ala Ser Ile Ile Ile Asn Asp Leu Leu
 370 375 380
 Leu Glu Val Lys Glu Ile Ser Leu Tyr Gly Ile Lys Thr Val Ala Ile
 385 390 395 400
 Lys Asp Thr Leu

<210> 570

<211> 539

<212> PRT

<213> C. Trachomatis D serovar

<400> 570

Met Cys Cys Val Asp Gly Ser Asn Ser Ile Gln Gln Arg Met Arg Phe
 1 5 10 15
 Cys Glu Tyr Arg Thr Ala Ala Gln Glu Ala Lys Thr Ser Leu Ser Ser
 20 25 30
 Asp Cys Ser Leu Leu Glu Ala Arg Leu Ala Leu Arg Ala Leu Ala Lys

Ile	Met	Val	Arg	Asp	Cys	Glu	Ala	Gly	Met	Val	Asp	Glu	Asp	Val	Leu
	195						200					205			
Tyr	Arg	Phe	Cys	His	Leu	Pro	Glu	Phe	Leu	Tyr	Val	Arg	Ser	Leu	Leu
	210					215					220				
Phe	Gly	Ala	Glu	Ile	Glu	Ala	Ala	Ser	Val	Ala	Ser	Leu	Ala	Arg	Met
225					230					235					240
Ile	Ile	Gln	Gly	Gly	Glu	Asp	Leu	Phe	Phe	Ser	Leu	Cys	Cys	Leu	Glu
			245						250					255	
Asn	Arg	Gln	Thr	Ala	Ile	Ser	Asp	His	Gln	Arg	Arg	Cys	Phe	Leu	Lys
		260						265					270		
Ala	Tyr	Val	Asp	Arg	Gln	Glu	Pro	Leu	Ala	Ala	Leu	Leu	Leu	Leu	Val
	275						280					285			
His	Asp	Ala	Asp	Trp	Val	Leu	His	Glu	Phe	Ser	Asp	Ser	Asp	Leu	Gln
	290					295					300				
Ser	Phe	Ile	Gln	Leu	Leu	Pro	Arg	Glu	Ala	His	Tyr	Thr	Lys	Lys	Phe
305					310					315					320
Leu	Gly	Cys	Val	Ala	Gln	Ser	Cys	Arg	Leu	Gly	Ile	Leu	Leu	Glu	Gly
			325						330					335	

<210> 573

<211> 426

<212> PRT

<213> C. Trachomatis D serovar

<400> 573

Met	Tyr	Val	Arg	Ser	Ile	Phe	Phe	Ser	Ile	Ile	Ala	Phe	Leu	Thr	Val
1				5					10					15	
Gly	Cys	Ser	Phe	Ser	Pro	Pro	Glu	Ser	Gly	Leu	Ile	Ile	Ala	Ile	His
			20					25					30		
Asp	Asp	Pro	Arg	Ser	Leu	Ser	Pro	Glu	Lys	Gly	Glu	Asn	Ala	Phe	His
		35					40					45			
Phe	Ser	Leu	Ser	Lys	Ala	Leu	Phe	Ala	Thr	Leu	Phe	Arg	Glu	Glu	Leu
	50					55					60				
Ser	Gly	Leu	Thr	Pro	Ala	Leu	Val	Ser	Ser	Tyr	Gln	Val	Ser	Glu	Asp
65					70					75					80
Gly	Arg	Phe	Tyr	Arg	Phe	Cys	Ile	Arg	Lys	Asp	Ala	Lys	Trp	Ser	Asp
			85						90					95	
Gly	Ser	Leu	Leu	Leu	Ala	Glu	Asp	Val	Ile	Ala	Ala	Trp	Glu	His	Thr
		100						105					110		
Lys	Gln	Ala	Gly	Arg	Tyr	Ser	Leu	Leu	Phe	Glu	Lys	Leu	Ser	Phe	Arg
	115						120					125			
Ala	Ser	Ser	Ser	Ser	Glu	Ile	Leu	Ile	Glu	Leu	Lys	Glu	Pro	Glu	Pro
	130					135					140				
Gln	Leu	Leu	Ala	Ile	Leu	Ala	Ser	Pro	Phe	Phe	Ala	Val	Tyr	Arg	Pro
145					150					155					160
Glu	Asn	Pro	Phe	Leu	Ser	Ser	Gly	Pro	Phe	Met	Pro	Lys	Thr	Tyr	Val
			165						170					175	
Gln	Gly	Gln	Thr	Leu	Val	Leu	Gln	Lys	Asn	Pro	Tyr	Tyr	Tyr	Asp	His
			180					185					190		
Ala	His	Val	Glu	Leu	His	Ser	Ile	Asp	Phe	Arg	Ile	Ile	Pro	Asn	Ile
	195						200					205			
Tyr	Thr	Ala	Leu	His	Leu	Leu	Arg	Arg	Gly	Asp	Val	Asp	Trp	Val	Gly
	210					215					220				
Gln	Pro	Trp	His	Gln	Gly	Ile	Pro	Phe	Glu	Leu	Arg	Thr	Thr	Ser	Ala
225				230						235					240
Leu	Tyr	Thr	His	Tyr	Ser	Val	Asp	Gly	Thr	Phe	Trp	Leu	Ile	Leu	Asn

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245 250 255
 Pro Lys Asp Pro Val Leu Ser Ser Leu Ser Asn Arg Gln Arg Leu Ile
 260 265 270
 Ala Ala Val Gln Lys Glu Lys Leu Val Lys Gln Ala Leu Gly Thr Gln
 275 280 285
 Tyr Arg Val Ala Glu Ser Ser Pro Ser Pro Glu Gly Ile Ile Ala His
 290 295 300
 Gln Glu Ala Ser Thr Pro Phe Pro Gly Lys Ile Thr Leu Ile Tyr Pro
 305 310 315 320
 Asn Asn Ile Thr Arg Cys Gln Arg Leu Ala Glu Val Leu Gln Glu Gln
 325 330 335
 Cys Arg Asp Ala Gly Ile Gln Leu Thr Leu Glu Gly Leu Glu Tyr His
 340 345 350
 Val Phe Val Gln Lys Arg Ala Thr Gln Asp Phe Ser Val Ser Thr Ala
 355 360 365
 Thr Ser Ile Ala Phe His Pro Leu Ala Lys Ser Lys Phe Asp Gln Thr
 370 375 380
 Ala Leu Asp Asn Phe Thr Cys Leu Pro Leu Tyr His Ile Glu Tyr Asp
 385 390 395 400
 Tyr Ile Leu Ser Arg Pro Leu Asp Gln Ile Val His Tyr Pro Ser Gly
 405 410 415
 Ser Val Asp Leu Thr Tyr Ala His Phe His
 420 425

<210> 574

<211> 605

<212> PRT

<213> C. Trachomatis D serovar

<400> 574

Met Gln Asn Ile Leu Arg Thr Ser Ser Cys Arg Tyr Met Phe Leu Leu
 1 5 10 15
 Gly Ile Arg Ser Val Trp Asn Arg Val Ala Val Val Asn Asn Phe Arg
 20 25 30
 Gly Ser Ser Trp Lys Ile Val Ala Ile Pro Ser Cys Ile Leu Phe Thr
 35 40 45
 Leu Ile Phe His Leu Pro Arg Trp Leu Ile Asp Phe Gly Val Cys Thr
 50 55 60
 Asn Leu Ala Cys Ser Leu Ser Ile Ile Phe Trp Val Phe Ser Leu Arg
 65 70 75 80
 Ser Ser Ala Ser Ala Arg Ile Phe Pro Ser Leu Leu Leu Tyr Leu Cys
 85 90 95
 Leu Leu Arg Leu Gly Leu Asn Leu Ala Ser Thr Arg Trp Ile Leu Ser
 100 105 110
 Ser Gly Trp Ala Ser Pro Leu Ile Phe Ala Leu Gly Asn Phe Phe Ser
 115 120 125
 Leu Gly Ser Ile Pro Val Ala Leu Thr Val Cys Leu Leu Leu Phe Leu
 130 135 140
 Val Asn Phe Leu Val Ile Thr Lys Gly Ala Glu Arg Ile Ala Glu Val
 145 150 155 160
 Arg Ala Arg Phe Ser Leu Glu Ala Leu Pro Gly Lys Gln Met Ser Leu
 165 170 175
 Asp Ala Asp Ile Ala Ala Gly Arg Ile Gly Tyr Ser Arg Ala Ser Val
 180 185 190
 Lys Lys Ser Ser Leu Leu Glu Glu Ser Asp Tyr Phe Ser Ala Met Glu
 195 200 205
 Gly Val Phe Arg Phe Val Lys Gly Asp Ala Ile Met Ser Trp Val Leu

210	215	220
Leu Gly Val Asn Ile	Leu Ala Ala Leu Phe Leu Gly Arg Ala Thr His	
225	230	235
Val Gly Asp Leu Trp	Leu Thr Val Leu Gly Asp Ala Leu Val Ser Gln	240
	245	250
Ile Pro Ala Leu Leu Thr Ser Cys	Ala Ala Ala Thr Leu Ile Ala Lys	255
	260	265
Val Gly Glu Lys Glu Ser Leu Ala	Gln His Leu Leu Asp Tyr Tyr Glu	270
	275	280
Gln Ser Arg Gln Ser Phe Leu Phe Ile Ala Leu Ile Leu Cys Gly Met		285
	290	295
Ala Cys Ile Pro Gly Ala Pro Lys Ala Leu Ile Leu Gly Phe Ser Val		300
305	310	315
Leu Leu Phe Leu Gly Tyr Lys Asn Pro Ser Ser Gly Glu Thr Leu Leu		320
	325	330
Phe Gln Lys Glu Arg Val Glu Phe Val Leu Pro Asp Glu Gly Val Gly		335
	340	345
Asn Pro Ala Asn Leu Tyr Lys Asp Ala Arg Asn Gln Ile Tyr Gln Glu		350
	355	360
Leu Gly Val Val Phe Pro Glu Ala Ile Val Val Arg His Val Thr Gly		365
	370	375
Ser Ser Pro Arg Leu Ile Phe Ser Gly Gln Glu Val Ala Leu Arg Glu		380
385	390	395
Leu Ser Cys Pro Ala Ile Leu Glu Ser Ile Arg Gln Leu Ala Pro Glu		400
	405	410
Thr Ile Ser Glu Arg Phe Val Thr Arg Leu Val Asp Glu Phe Arg Glu		415
	420	425
His Ala Phe Leu Ser Ile Glu Glu Ile Leu Pro Leu Lys Ile Ser Glu		430
	435	440
Asn Ser Leu Ile Phe Leu Leu Arg Ala Leu Val Arg Glu Arg Val Ser		445
	450	455
Leu His Leu Phe Pro Lys Ile Leu Glu Ala Ile Asp Val Tyr Gly Ser		460
465	470	475
Gln Pro Lys Asn Ser Gln Glu Leu Val Glu Cys Val Arg Lys Tyr Leu		480
	485	490
Gly Lys Gln Ile Gly Leu Ser Leu Trp Asn Arg Gln Asp Val Leu Glu		495
	500	505
Val Ile Thr Ile Asp Ser Leu Val Glu Gln Phe Val Arg Asp Ser Gln		510
	515	520
Glu Lys Val Val Leu Asp Leu Asn Glu Lys Val Val Ala Gln Val Lys		525
	530	535
His Leu Leu Arg Val Gly Glu Gly Asn Phe Arg Ala Ile Val Thr Gly		540
545	550	555
Ser Glu Thr Arg Lys Glu Leu Lys Arg Ile Val Asp Pro Tyr Phe Pro		560
	565	570
Asp Leu Leu Val Leu Ala His Ser Glu Leu Pro Glu Glu Ile Pro Ile		575
	580	585
Thr Leu Leu Gly Ala Val Ser Asp Glu Val Leu Leu Ser		590
	595	600
		605

<210> 575

<211> 173

<212> PRT

<213> C. Trachomatis D serovar

<400> 575

Met Lys Lys Phe Leu Leu Leu Ser Leu Met Ser Leu Ser Ser Leu Pro

1 5 10 15
 Thr Phe Ala Ala Asn Ser Thr Gly Thr Ile Gly Ile Val Asn Leu Arg
 20 25 30
 Arg Cys Leu Glu Glu Ser Ala Leu Gly Lys Lys Glu Ser Ala Glu Phe
 35 40 45
 Glu Lys Met Lys Asn Gln Phe Ser Asn Ser Met Gly Lys Met Glu Glu
 50 55 60
 Glu Leu Ser Ser Ile Tyr Ser Lys Leu Gln Asp Asp Asp Tyr Met Glu
 65 70 75 80
 Gly Leu Ser Glu Thr Ala Ala Ala Glu Leu Arg Lys Lys Phe Glu Asp
 85 90 95
 Leu Ser Ala Glu Tyr Asn Thr Ala Gln Gly Gln Tyr Tyr Gln Ile Leu
 100 105 110
 Asn Gln Ser Asn Leu Lys Arg Met Gln Lys Ile Met Glu Glu Val Lys
 115 120 125
 Lys Ala Ser Glu Thr Val Arg Ile Gln Glu Gly Leu Ser Val Leu Leu
 130 135 140
 Asn Glu Asp Ile Val Leu Ser Ile Asp Ser Ser Ala Asp Lys Thr Asp
 145 150 155 160
 Ala Val Ile Lys Val Leu Asp Asp Ser Phe Gln Asn Asn
 165 170

<210> 576

<211> 354

<212> PRT

<213> C. Trachomatis D serovar

<400> 576

Met Ser Gln Ser Thr Tyr Ser Leu Glu Gln Leu Ala Asp Phe Leu Lys
 1 5 10 15
 Val Glu Phe Gln Gly Asn Gly Ala Thr Leu Leu Ser Gly Val Glu Glu
 20 25 30
 Ile Glu Glu Ala Lys Thr Ala His Ile Thr Phe Leu Asp Asn Glu Lys
 35 40 45
 Tyr Ala Lys His Leu Lys Ser Ser Glu Ala Gly Ala Ile Ile Ile Ser
 50 55 60
 Arg Thr Gln Phe Gln Lys Tyr Arg Asp Leu Asn Lys Asn Phe Leu Ile
 65 70 75 80
 Thr Ser Glu Ser Pro Ser Leu Val Phe Gln Lys Cys Leu Glu Leu Phe
 85 90 95
 Ile Thr Pro Val Asp Ser Gly Phe Pro Gly Ile His Pro Thr Ala Val
 100 105 110
 Ile His Pro Thr Ala Ile Ile Glu Asp His Val Cys Ile Glu Pro Tyr
 115 120 125
 Ala Val Val Cys Gln His Ala His Val Gly Ser Ala Cys His Ile Gly
 130 135 140
 Ser Gly Ser Val Ile Gly Ala Tyr Ser Thr Val Gly Glu His Ser Tyr
 145 150 155 160
 Ile His Pro Arg Val Val Ile Arg Glu Arg Val Ser Ile Gly Lys Arg
 165 170 175
 Val Ile Ile Gln Pro Gly Ala Val Ile Gly Ser Cys Gly Phe Gly Tyr
 180 185 190
 Val Thr Ser Ala Phe Gly Gln His Lys His Leu Lys His Leu Gly Lys
 195 200 205
 Val Ile Ile Glu Asp Asp Val Glu Ile Gly Ala Asn Thr Thr Ile Asp
 210 215 220
 Arg Gly Arg Phe Lys His Ser Val Val Arg Glu Gly Ser Lys Ile Asp

225 230 235 240
 Asn Leu Val Gln Ile Ala His Gln Val Glu Val Gly Gln His Ser Met
 245 250 255
 Ile Val Ala Gln Ala Gly Ile Ala Gly Ser Thr Lys Ile Gly Asn His
 260 265 270
 Val Ile Ile Gly Gly Gln Ala Gly Ile Thr Gly His Ile Cys Ile Ala
 275 280 285
 Asp His Val Ile Met Met Ala Gln Thr Gly Val Thr Lys Ser Ile Thr
 290 295 300
 Ser Pro Gly Ile Tyr Gly Gly Ala Pro Ala Arg Pro Tyr Gln Glu Ile
 305 310 315 320
 His Arg Gln Val Ala Lys Val Arg Asn Leu Pro Arg Leu Glu Glu Arg
 325 330 335
 Ile Ala Ala Leu Glu Lys Leu Val Gln Lys Leu Glu Ala Leu Ser Glu
 340 345 350
 Gln His

<210> 577
 <211> 421
 <212> PRT
 <213> C. Trachomatis D serovar

<400> 577
 Met Thr Ala Ser Gly Gly Ala Gly Gly Leu Gly Ser Thr Gln Thr Val
 1 5 10 15
 Asp Val Ala Arg Ala Gln Ala Ala Ala Thr Gln Asp Ala Gln Glu
 20 25 30
 Val Ile Gly Ser Gln Glu Ala Ser Glu Ala Ser Met Leu Lys Gly Cys
 35 40 45
 Glu Asp Leu Ile Asn Pro Ala Ala Ala Thr Arg Ile Lys Lys Lys Gly
 50 55 60
 Glu Lys Phe Glu Ser Leu Glu Ala Arg Arg Lys Pro Thr Ala Asp Lys
 65 70 75 80
 Ala Glu Lys Lys Ser Glu Ser Thr Glu Glu Lys Gly Asp Thr Pro Leu
 85 90 95
 Glu Asp Arg Phe Thr Glu Asp Leu Ser Glu Val Ser Gly Glu Asp Phe
 100 105 110
 Arg Gly Leu Lys Asn Ser Phe Asp Asp Ser Ser Pro Asp Glu Ile
 115 120 125
 Leu Asp Ala Leu Thr Ser Lys Phe Ser Asp Pro Thr Ile Lys Asp Leu
 130 135 140
 Ala Leu Asp Tyr Leu Ile Gln Thr Ala Pro Ser Asp Gly Lys Leu Lys
 145 150 155 160
 Ser Thr Leu Ile Gln Ala Lys His Gln Leu Met Ser Gln Asn Pro Gln
 165 170 175
 Ala Ile Val Gly Arg Asn Val Leu Leu Ala Ser Glu Thr Phe Ala
 180 185 190
 Ser Arg Ala Asn Thr Ser Pro Ser Ser Leu Arg Ser Leu Tyr Phe Gln
 195 200 205
 Val Thr Ser Ser Pro Ser Asn Cys Ala Asn Leu His Gln Met Leu Ala
 210 215 220
 Ser Tyr Leu Pro Ser Glu Lys Thr Ala Val Met Glu Phe Leu Val Asn
 225 230 235 240
 Gly Met Val Ala Asp Leu Lys Ser Glu Gly Pro Ser Ile Pro Pro Ala
 245 250 255
 Lys Leu Gln Val Tyr Met Thr Glu Leu Ser Asn Leu Gln Ala Leu His

Ser Val Asn Ser Phe Phe Asp Arg Asn Ile Gly Asn Leu Glu Asn Ser
 260 275 280 285
 Leu Lys His Glu Gly His Ala Pro Ile Pro Ser Leu Thr Thr Gly Asn
 290 295 300
 Leu Thr Lys Thr Phe Leu Gln Leu Val Glu Asp Lys Phe Pro Ser Ser
 305 310 315 320
 Ser Lys Ala Gln Lys Ala Leu Asn Glu Leu Val Gly Pro Asp Thr Gly
 325 330 335
 Pro Gln Thr Glu Val Leu Asn Leu Phe Phe Arg Ala Leu Asn Gly Cys
 340 345 350
 Ser Pro Arg Ile Phe Ser Gly Ala Glu Lys Lys Gln Gln Leu Ala Ser
 355 360 365
 Val Ile Thr Asn Thr Leu Asp Ala Ile Asn Ala Asp Asn Glu Asp Tyr
 370 375 380
 Pro Lys Pro Gly Asp Phe Pro Arg Ser Ser Phe Ser Ser Thr Pro Pro
 385 390 395 400
 His Ala Pro Val Pro Gln Ser Glu Ile Pro Thr Ser Pro Thr Ser Thr
 405 410 415
 Gln Pro Pro Ser Pro
 420

<210> 578

<211> 231

<212> PRT

<213> C. Trachomatis D serovar

<400> 578

Met Met Glu Val Phe Met Asn Phe Leu Asp Gln Leu Asp Leu Ile Ile
 1 5 10 15
 Gln Asn Lys His Met Leu Glu His Thr Phe Tyr Val Lys Trp Ser Lys
 20 25 30
 Gly Glu Leu Thr Lys Glu Gln Leu Gln Ala Tyr Ala Lys Asp Tyr Tyr
 35 40 45
 Leu His Ile Lys Ala Phe Pro Lys Tyr Leu Ser Ala Ile His Ser Arg
 50 55 60
 Cys Asp Asp Leu Glu Ala Arg Lys Leu Leu Leu Asp Asn Leu Met Asp
 65 70 75 80
 Glu Glu Asn Gly Tyr Pro Asn His Ile Asp Leu Trp Lys Gln Phe Val
 85 90 95
 Phe Ala Leu Gly Val Thr Pro Glu Glu Leu Glu Ala His Glu Pro Ser
 100 105 110
 Glu Ala Ala Lys Ala Lys Val Ala Thr Phe Met Arg Trp Cys Thr Gly
 115 120 125
 Asp Ser Leu Ala Ala Gly Val Ala Ala Leu Tyr Ser Tyr Glu Ser Gln
 130 135 140
 Ile Pro Arg Ile Ala Arg Glu Lys Ile Arg Gly Leu Thr Glu Tyr Phe
 145 150 155 160
 Gly Phe Ser Asn Pro Glu Asp Tyr Ala Tyr Phe Thr Glu His Glu Glu
 165 170 175
 Ala Asp Val Arg His Ala Arg Glu Glu Lys Ala Leu Ile Glu Met Leu
 180 185 190
 Leu Lys Asp Asp Ala Asp Lys Val Leu Glu Ala Ser Gln Glu Val Thr
 195 200 205
 Gln Ser Leu Tyr Gly Phe Leu Asp Ser Phe Leu Asp Pro Gly Thr Cys
 210 215 220
 Cys Ser Cys His Gln Ser Tyr

225

230

<210> 579

<211> 243

<212> PRT

<213> C. Trachomatis D serovar

<400> 579

Met	Lys	Ile	Thr	Pro	Ile	Lys	Thr	Arg	Lys	Val	Phe	Ala	His	Asp	Ser
1				5					10					15	
Leu	Gln	Glu	Ile	Leu	Gln	Glu	Ala	Leu	Pro	Pro	Leu	Gln	Glu	Arg	Ser
			20					25					30		
Val	Val	Val	Val	Ser	Ser	Lys	Ile	Val	Ser	Leu	Cys	Glu	Gly	Ala	Val
		35					40					45			
Ala	Asp	Ala	Arg	Met	Cys	Lys	Ala	Glu	Leu	Ile	Lys	Lys	Glu	Ala	Asp
	50					55					60				
Ala	Tyr	Leu	Phe	Cys	Glu	Lys	Ser	Gly	Ile	Tyr	Leu	Thr	Lys	Lys	Glu
65					70					75					80
Gly	Ile	Leu	Ile	Pro	Ser	Ala	Gly	Ile	Asp	Glu	Ser	Asn	Thr	Asp	Gln
				85					90					95	
Pro	Phe	Val	Leu	Tyr	Pro	Lys	Asp	Ile	Leu	Gly	Ser	Cys	Asn	Arg	Ile
		100						105					110		
Gly	Glu	Trp	Leu	Arg	Asn	Tyr	Phe	Arg	Val	Lys	Glu	Leu	Gly	Val	Ile
		115					120					125			
Ile	Thr	Asp	Ser	His	Thr	Thr	Pro	Met	Arg	Arg	Gly	Val	Leu	Gly	Ile
	130					135					140				
Gly	Leu	Cys	Trp	Tyr	Gly	Phe	Ser	Pro	Leu	His	Asn	Tyr	Ile	Gly	Ser
145					150					155					160
Leu	Asp	Cys	Phe	Gly	Arg	Pro	Leu	Gln	Met	Thr	Gln	Ser	Asn	Leu	Val
				165					170					175	
Asp	Ala	Leu	Ala	Val	Ala	Ala	Val	Val	Cys	Met	Gly	Glu	Gly	Asn	Glu
		180						185					190		
Gln	Thr	Pro	Leu	Ala	Val	Ile	Glu	Gln	Ala	Pro	Asn	Met	Val	Tyr	His
		195					200					205			
Ser	His	Pro	Thr	Ser	Arg	Glu	Glu	Tyr	Cys	Ser	Leu	Arg	Ile	Asp	Glu
	210					215					220				
Thr	Glu	Asp	Leu	Tyr	Gly	Pro	Phe	Leu	Gln	Ala	Val	Thr	Trp	Ser	Gln
225					230					235					240
Glu	Lys	Lys													

<210> 580

<211> 383

<212> PRT

<213> C. Trachomatis D serovar

<400> 580

Met	Leu	Pro	His	Gln	Gln	Asn	Ser	Ser	Ser	Glu	Arg	Ala	Arg	His	His
1				5					10					15	
Glu	Ser	Arg	Ser	His	Arg	His	Ser	Ser	Ser	Ser	Arg	His	His	Val	Thr
			20					25					30		
Arg	Ser	Gln	Ser	Ser	Ala	Leu	Pro	Gln	Leu	Gln	Glu	Arg	Pro	Val	Pro
		35					40					45			
His	Pro	Leu	Ala	Glu	Arg	Glu	Leu	Ile	Ile	Phe	His	Ser	Val	His	Gln
	50					55					60				
Gln	Gln	Asn	Asn	Asn	Pro	Leu	Arg	Met	Ile	Cys	Asp	Thr	Ile	Arg	Gln
65					70					75					80

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<210> 581
<211> 193
<212> PRT
<213> C. Trachomatis D serovar
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<400>	581															
Met	Trp	Phe	Phe	Leu	Gly	Ser	Pro	Ser	Ala	Ile	Thr	Asn	Phe	Ser	Arg	
1				5					10					15		
Val	Asp	Val	Ala	Leu	Asn	Leu	Arg	Ile	Asn	Arg	Gln	Ile	Arg	Ala	Pro	
			20					25					30			
Arg	Val	Arg	Val	Ile	Gly	Ser	Ala	Gly	Glu	Gln	Leu	Gly	Ile	Leu	Ser	
			35				40					45				
Ile	Lys	Glu	Ala	Leu	Asp	Leu	Ala	Lys	Glu	Ala	Asn	Leu	Asp	Leu	Val	
	50					55					60					
Glu	Val	Ala	Ser	Asn	Ser	Glu	Pro	Pro	Val	Cys	Lys	Ile	Met	Asp	Tyr	
65					70					75				80		
Gly	Lys	Tyr	Arg	Tyr	Asp	Val	Thr	Lys	Lys	Glu	Lys	Asp	Ser	Lys	Lys	
				85					90					95		

<212> PRT

<213> C. Trachomatis D serovar

<400> 583

Met 1	Phe	Thr	Arg	Ile	Val	Met	Val	Asp	Leu	Gln	Glu	Lys	Gln	Cys	Thr
Ile	Val	Lys	Arg	Asn	Gly	Met	Phe	Val	Pro	Phe	Asp	Arg	Asn	Arg	Ile
Phe	Gln	Ala	Leu	Glu	Ala	Ala	Phe	Arg	Asp	Thr	Arg	Arg	Ile	Asp	Asp
His	Met	Pro	Leu	Pro	Glu	Asp	Leu	Glu	Ser	Ser	Ile	Arg	Ser	Ile	Thr
His	Gln	Val	Val	Lys	Glu	Val	Val	Gln	Lys	Ile	Thr	Asp	Gly	Gln	Val
Val	Thr	Val	Glu	Arg	Ile	Gln	Asp	Met	Val	Glu	Ser	Gln	Leu	Tyr	Val
Asn	Gly	Leu	Gln	Asp	Val	Ala	Arg	Asp	Tyr	Ile	Val	Tyr	Arg	Asp	Asp
Arg	Lys	Ala	His	Arg	Lys	Lys	Ser	Trp	Gln	Ser	Leu	Ser	Val	Val	Arg
Arg	Cys	Gly	Thr	Val	Val	His	Phe	Asn	Pro	Met	Lys	Ile	Ser	Ala	Ala
Leu	Glu	Lys	Ala	Phe	Arg	Ala	Thr	Asp	Lys	Thr	Glu	Gly	Met	Thr	Pro
Ser	Ser	Val	Arg	Glu	Glu	Ile	Asn	Ala	Leu	Thr	Gln	Asn	Ile	Val	Ala
Glu	Ile	Glu	Glu	Cys	Cys	Pro	Gln	Gln	Asp	Arg	Arg	Ile	Asp	Ile	Glu
Lys	Ile	Gln	Asp	Ile	Val	Glu	Gln	Gln	Leu	Met	Val	Val	Gly	His	Tyr
Ala	Val	Ala	Lys	Asn	Tyr	Ile	Leu	Tyr	Arg	Glu	Ala	Arg	Ala	Arg	Val
Arg	Asp	Asn	Arg	Glu	Glu	Asp	Gly	Ser	Thr	Glu	Lys	Thr	Ile	Ala	Glu
Glu	Ala	Val	Glu	Val	Leu	Ser	Lys	Asp	Gly	Ser	Thr	Tyr	Thr	Met	Thr
His	Ser	Gln	Leu	Leu	Ala	His	Leu	Ala	Arg	Ala	Cys	Ser	Arg	Phe	Pro
Glu	Thr	Thr	Asp	Ala	Ala	Leu	Leu	Thr	Asp	Met	Ala	Phe	Ala	Asn	Phe
Tyr	Ser	Gly	Ile	Lys	Glu	Ser	Glu	Val	Val	Leu	Ala	Cys	Ile	Met	Ala
Ala	Arg	Ala	Asn	Ile	Glu	Lys	Glu	Pro	Asp	Tyr	Ala	Phe	Val	Ala	Ala
Glu	Leu	Leu	Leu	Asp	Val	Val	Tyr	Lys	Glu	Ala	Leu	Gly	Lys	Ser	Lys
Tyr	Ala	Glu	Asp	Leu	Glu	Gln	Ala	His	Arg	Asp	His	Phe	Lys	Arg	Tyr
Ile	Ala	Glu	Gly	Asp	Thr	Tyr	Arg	Leu	Asn	Ala	Glu	Leu	Lys	His	Leu
Phe	Asp	Leu	Asp	Ala	Leu	Ala	Asp	Ala	Met	Asp	Leu	Ser	Arg	Asp	Leu
Gln	Phe	Ser	Tyr	Met	Gly	Ile	Gln	Asn	Leu	Tyr	Asp	Arg	Tyr	Phe	Asn
His	His	Glu	Gly	Cys	Arg	Leu	Glu	Thr	Pro	Gln	Ile	Phe	Trp	Met	Arg

Val	Ala	Met	Gly	Leu	Ala	Leu	Asn	Glu	Gln	Asp	Lys	Thr	Ser	Trp	Ala
			420					425					430		
Ile	Thr	Phe	Tyr	Asn	Leu	Leu	Ser	Thr	Phe	Arg	Tyr	Thr	Pro	Ala	Thr
		435					440					445			
Pro	Thr	Leu	Phe	Asn	Ser	Gly	Met	Arg	His	Ser	Gln	Leu	Ser	Ser	Cys
		450				455					460				
Tyr	Leu	Ser	Thr	Val	Gln	Asp	Asn	Leu	Val	Asn	Ile	Tyr	Lys	Val	Ile
465					470					475					480
Ala	Asp	Asn	Ala	Met	Leu	Ser	Lys	Trp	Ala	Gly	Gly	Ile	Gly	Asn	Asp
				485					490					495	
Trp	Thr	Ala	Ile	Arg	Ala	Thr	Gly	Ala	Leu	Ile	Lys	Gly	Thr	Asn	Gly
			500					505					510		
Arg	Ser	Gln	Gly	Val	Ile	Pro	Phe	Ile	Lys	Val	Thr	Asn	Asp	Thr	Ala
		515					520					525			
Val	Ala	Val	Asn	Gln	Gly	Gly	Lys	Arg	Lys	Gly	Ala	Val	Cys	Val	Tyr
		530				535					540				
Leu	Glu	Val	Trp	His	Leu	Asp	Tyr	Glu	Asp	Phe	Leu	Glu	Leu	Arg	Lys
545					550					555					560
Asn	Thr	Gly	Asp	Glu	Arg	Arg	Arg	Ala	His	Asp	Val	Asn	Ile	Ala	Ser
				565					570					575	
Trp	Ile	Pro	Asp	Leu	Phe	Phe	Lys	Arg	Leu	Gln	Gln	Lys	Gly	Thr	Trp
			580					585					590		
Thr	Leu	Phe	Ser	Pro	Asp	Asp	Val	Pro	Gly	Leu	His	Asp	Ala	Tyr	Gly
		595					600					605			
Glu	Glu	Phe	Glu	Arg	Leu	Tyr	Glu	Glu	Tyr	Glu	Arg	Lys	Val	Asp	Thr
		610				615					620				
Gly	Glu	Ile	Arg	Leu	Phe	Lys	Lys	Val	Glu	Ala	Glu	Asp	Leu	Trp	Arg
625					630					635					640
Lys	Met	Leu	Ser	Met	Leu	Phe	Glu	Thr	Gly	His	Pro	Trp	Met	Thr	Phe
				645					650					655	
Lys	Asp	Pro	Ser	Asn	Ile	Arg	Ser	Ala	Gln	Asp	His	Lys	Gly	Val	Val
			660					665					670		
Arg	Cys	Ser	Asn	Leu	Cys	Thr	Glu	Ile	Leu	Leu	Asn	Cys	Ser	Glu	Thr
		675					680					685			
Glu	Thr	Ala	Val	Cys	Asn	Leu	Gly	Ser	Ile	Asn	Leu	Val	Gln	His	Ile
		690				695					700				
Val	Gly	Asp	Gly	Leu	Asp	Glu	Glu	Lys	Leu	Ser	Glu	Thr	Ile	Ser	Ile
705					710					715					720
Ala	Val	Arg	Met	Leu	Asp	Asn	Val	Ile	Asp	Ile	Asn	Phe	Tyr	Pro	Thr
				725					730					735	
Lys	Glu	Ala	Lys	Glu	Ala	Asn	Phe	Ala	His	Arg	Ala	Ile	Gly	Leu	Gly
			740					745					750		
Val	Met	Gly	Phe	Gln	Asp	Ala	Leu	Tyr	Lys	Leu	Asp	Ile	Ser	Tyr	Ala
		755					760					765			
Ser															

865 870 875 880
 Tyr Lys His Leu Phe Val Lys Ser Asn Leu Ser Gly Glu Phe Thr Ile
 885 890 895
 Pro Asn Val Tyr Leu Ile Glu Lys Leu Lys Lys Leu Gly Ile Trp Asp
 900 905 910
 Ala Asp Met Leu Asp Asp Leu Lys Tyr Phe Asp Gly Ser Leu Leu Glu
 915 920 925
 Ile Glu Arg Ile Pro Asp His Leu Lys His Ile Phe Leu Thr Ala Phe
 930 935 940
 Glu Ile Glu Pro Glu Trp Ile Ile Glu Cys Ala Ser Arg Arg Gln Lys
 945 950 955 960
 Trp Ile Asp Met Gly Gln Ser Leu Asn Leu Tyr Leu Ala Gln Pro Asp
 965 970 975
 Gly Lys Lys Leu Ser Asn Met Tyr Leu Thr Ala Trp Lys Lys Gly Leu
 980 985 990
 Lys Thr Thr Tyr Tyr Leu Arg Ser Ser Ser Ala Thr Thr Val Glu Lys
 995 1000 1005
 Ser Phe Val Asp Ile Asn Lys Arg Gly Ile Gln Pro Arg Trp Met Lys
 1010 1015 1020
 Asn Lys Ser Ala Ser Ala Gly Ile Ile Val Glu Arg Ala Lys Lys Ala
 1025 1030 1035 1040
 Pro Val Cys Ser Leu Glu Glu Gly Cys Glu Ala Cys Gln
 1045 1050

<210> 584

<211> 346

<212> PRT

<213> C. Trachomatis D serovar

<400> 584

Met Gln Ala Asp Ile Leu Asp Gly Lys Gln Lys Arg Val Asn Leu Asn
 1 5 10 15
 Ser Lys Arg Leu Val Asn Cys Asn Gln Val Asp Val Asn Gln Leu Val
 20 25 30
 Pro Ile Lys Tyr Lys Trp Ala Trp Glu His Tyr Leu Asn Gly Cys Ala
 35 40 45
 Asn Asn Trp Leu Pro Thr Glu Ile Pro Met Gly Lys Asp Ile Glu Leu
 50 55 60
 Trp Lys Ser Asp Arg Leu Ser Glu Asp Glu Arg Arg Val Ile Leu Leu
 65 70 75 80
 Asn Leu Gly Phe Phe Ser Thr Ala Glu Ser Leu Val Gly Asn Asn Ile
 85 90 95
 Val Leu Ala Ile Phe Lys His Val Thr Asn Pro Glu Ala Arg Gln Tyr
 100 105 110
 Leu Leu Arg Gln Ala Phe Glu Glu Ala Val His Thr His Thr Phe Leu
 115 120 125
 Tyr Ile Cys Glu Ser Leu Gly Leu Asp Glu Lys Glu Ile Phe Asn Ala
 130 135 140
 Tyr Asn Glu Arg Ala Ala Ile Lys Ala Lys Asp Asp Phe Gln Met Glu
 145 150 155 160
 Ile Thr Gly Lys Val Leu Asp Pro Asn Phe Arg Thr Asp Ser Val Glu
 165 170 175
 Gly Leu Gln Glu Phe Val Lys Asn Leu Val Gly Tyr Tyr Ile Ile Met
 180 185 190
 Glu Gly Ile Phe Phe Tyr Ser Gly Phe Val Met Ile Leu Ser Phe His
 195 200 205
 Arg Gln Asn Lys Met Ile Gly Ile Gly Glu Gln Tyr Gln Tyr Ile Leu

260 265 270
 Gln Asp Ala Leu Arg Lys Ile Val Ser Cys Ser Lys Ser Gly Gln Lys
 275 280 285
 Ile Arg Leu Ala Lys Ser Pro Leu Tyr Ser Asp Asn Val Cys Asp Asn
 290 295 300
 Tyr Phe Ser Thr Phe Gln His Asn Val Arg Thr Ile Thr Glu Glu Leu
 305 310 315 320
 Gly Gly Thr Val Leu Glu
 325

<210> 586

<211> 102

<212> PRT

<213> C. Trachomatis D serovar

<400> 586

Met Gln Asn Lys Arg Lys Val Arg Asp Asp Phe Ile Lys Ile Val Lys
 1 5 10 15
 Asp Val Lys Lys Asp Phe Pro Glu Leu Asp Leu Lys Ile Arg Val Asn
 20 25 30
 Lys Glu Lys Val Thr Phe Leu Asn Ser Pro Leu Glu Leu Tyr His Lys
 35 40 45
 Ser Val Ser Leu Ile Leu Gly Leu Leu Gln Gln Ile Glu Asn Ser Leu
 50 55 60
 Gly Leu Phe Pro Asp Ser Pro Val Leu Glu Lys Leu Glu Asp Asn Ser
 65 70 75 80
 Leu Lys Leu Lys Lys Ala Leu Ile Met Leu Ile Leu Ser Arg Lys Asp
 85 90 95
 Met Phe Ser Lys Ala Glu
 100

<210> 587

<211> 243

<212> PRT

<213> C. Trachomatis D serovar

<400> 587

Val Gly Cys Asn Leu Ala Gln Phe Leu Gly Lys Lys Val Leu Leu Ala
 1 5 10 15
 Asp Leu Asp Pro Gln Ser Asn Leu Ser Ser Gly Leu Gly Ala Ser Val
 20 25 30
 Arg Asn Asn Gln Lys Gly Leu His Asp Ile Val Tyr Lys Ser Asn Asp
 35 40 45
 Leu Lys Ser Ile Ile Cys Glu Thr Lys Lys Asp Ser Val Asp Leu Ile
 50 55 60
 Pro Ala Ser Phe Leu Ser Glu Gln Phe Arg Glu Leu Asp Ile His Arg
 65 70 75 80
 Gly Pro Ser Asn Asn Leu Lys Leu Phe Leu Asn Glu Tyr Cys Ala Pro
 85 90 95
 Phe Tyr Asp Ile Cys Ile Ile Asp Thr Pro Pro Ser Leu Gly Gly Leu
 100 105 110
 Thr Lys Glu Ala Phe Val Ala Gly Asp Lys Leu Ile Ala Cys Leu Thr
 115 120 125
 Pro Glu Pro Phe Ser Ile Leu Gly Leu Gln Lys Ile Arg Glu Phe Leu
 130 135 140
 Ser Ser Val Gly Lys Pro Glu Glu Glu His Ile Leu Gly Ile Ala Leu
 145 150 155 160

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<210> 588
<211> 527
<212> PRT
<213> C. Trachomatis D serovar
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Met 1	Pro	Ser	Leu	Ser	Gln	Ser	Arg	Arg	Ile 10	Ile	Gln	Gln	Ser	Ser	Ile
Arg	Lys	Ile	Trp	Asn	Gln	Ile	Asp	Thr	Ser	Pro	Lys	His	Gly	Val	Cys
Val	Pro	Leu	Phe	Ser	Leu	Tyr	Thr	Gln	Glu	Ser	Cys	Gly	Ile	Gly	Glu
Phe	Leu	Asp	Leu	Ile	Pro	Met	Ile	Asp	Trp	Cys	Ile	Ser	Cys	Gly	Phe
Gln	Ile	Leu	Gln	Ile	Leu	Pro	Ile	Asn	Asp	Thr	Gly	Ser	Cys	Ser	Ser
Pro	Tyr	Asn	Ser	Ile	Ser	Ser	Ile	Ala	Leu	Asn	Pro	Leu	His	Leu	Ser
Ile	Ser	Ala	Leu	Pro	Tyr	Lys	Glu	Glu	Val	Pro	Ala	Ala	Glu	Thr	Arg
Ile	Arg	Glu	Met	Gln	Gln	Leu	Ser	Gln	Leu	Pro	Gln	Val	His	Tyr	Glu
Lys	Val	Arg	Ser	Met	Lys	Arg	Asp	Phe	Phe	Gln	Glu	Tyr	Tyr	Arg	Val
Cys	Lys	Gln	Lys	Lys	Leu	Thr	Asp	His	Pro	Asp	Phe	Tyr	Ala	Phe	Cys
Glu	Gln	Glu	Lys	Tyr	Trp	Leu	His	Pro	Tyr	Ala	Leu	Phe	Arg	Ser	Ile
Arg	Glu	His	Leu	Asp	Asn	Leu	Pro	Ile	Asn	His	Trp	Pro	Thr	Thr	Tyr
Thr	Asp	Leu	Ser	Gln	Ile	Thr	Glu	His	Glu	Arg	Thr	Phe	Ala	Glu	Asp
Ile	Gln	Phe	His	Ser	Tyr	Leu	Gln	Tyr	Leu	Cys	Phe	Gln	Gln	Met	Thr
Gln	Val	Arg	Glu	His	Ala	Asn	Cys	Lys	Ser	Cys	Leu	Ile	Lys	Gly	Asp
Ile	Pro	Ile	Leu	Ile	Ser	Lys	Asp	Ser	Cys	Asp	Val	Trp	Phe	Tyr	Arg
His	Tyr	Phe	Ser	Ser	Ser	Glu	Ser	Val	Gly	Ala	Pro	Pro	Asp	Leu	Tyr
Asn	Ala	Glu	Gly	Gln	Asn	Trp	His	Leu	Pro	Ile	Cys	Asn	Met	Lys	Thr
Leu	Gln	Gln	Asp	Asn	Tyr	Leu	Trp	Trp	Lys	Glu	Arg	Leu	Arg	Tyr	Ala

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<210> 589
<211> 146
<212> PRT
<213> C. Trachomatis D serovar
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<210> 590

<211> 650
 <212> PRT
 <213> C. Trachomatis D serovar

<400> 590

Met	Thr	Ile	Pro	Ile	His	Glu	Asn	Lys	Tyr	Ser	Met	Ile	Ser	Phe	Thr
1				5					10					15	
Arg	Thr	Ile	Gly	Phe	Arg	Leu	Trp	Leu	Ile	Cys	Val	Ala	Ala	Ile	Met
			20					25					30		
Phe	Pro	Leu	Gly	Ile	Asn	Ile	Leu	Gln	Leu	Asn	Leu	Gln	Gln	Tyr	Lys
		35					40					45			
Lys	Thr	Leu	Ser	Ser	Ile	Thr	Ser	Asp	Leu	Arg	Glu	Asn	Ala	Leu	Phe
	50					55					60				
Lys	Ala	His	Thr	Leu	Gln	Gln	Thr	Ile	Pro	Leu	Asn	Ile	Asp	Ile	Leu
65					70					75					80
Ala	Leu	Phe	Ser	Glu	Ile	Phe	Asp	Leu	Asp	Arg	Gly	Val	Pro	Ala	Glu
				85					90					95	
Pro	Asp	Leu	Ala	Leu	Ser	Lys	Glu	Met	Glu	Lys	Ile	Phe	His	Ser	Thr
			100					105					110		
Tyr	Lys	Glu	Ile	Ser	Leu	Val	Lys	Glu	Ala	Asp	Gly	Asn	Phe	Arg	
		115					120					125			
Val	Val	Ala	Ser	Ser	Arg	Ile	Glu	Gln	Leu	Gly	Lys	Asn	Tyr	Asn	Gln
		130				135					140				
Glu	Ile	Phe	Leu	Ser	Asp	Ser	Gln	Pro	Phe	Leu	Ala	Thr	Leu	Arg	His
145					150					155					160
Ser	Gly	Ser	Asp	Ser	Gln	Val	Leu	Ala	Val	Leu	Gln	Thr	Asn	Ile	Phe
				165					170					175	
Asp	Ile	Ser	Ser	Gln	Glu	Val	Leu	Gly	Val	Leu	Tyr	Thr	Leu	Ser	Asp
			180					185					190		
Thr	Asn	Tyr	Leu	Leu	Asn	Gly	Leu	Leu	Ala	Ala	Lys	Asp	Pro	Leu	Ser
		195					200					205			
Val	Lys	Thr	Ala	Ile	Leu	Ser	Lys	Asn	Gly	Ile	Ile	Leu	Gln	Ala	Thr
	210					215					220				
Asp	Ser	Ser	Leu	Asp	Leu	Val	Ser	Ile	His	Lys	Thr	Val	Ser	Lys	Glu
225					230					235					240
Gln	Phe	Cys	Asp	Val	Phe	Leu	Arg	Asp	Asp	Ile	Cys	Pro	Pro	His	Leu
				245					250					255	
Leu	Leu	Arg	Pro	Pro	Leu	Asn	Leu	Asp	Pro	Leu	Pro	Tyr	Gly	Glu	Asn
			260					265					270		
Phe	Val	Ser	Phe	Cys	Ile	Gly	Asn	Thr	Glu	Met	Trp	Gly	Tyr	Ile	His
		275					280					285			
Ser	Leu	Pro	Glu	Met	Asp	Phe	Arg	Ile	Leu	Thr	Tyr	Glu	Glu	Lys	Ser
		290				295					300				
Ile	Ile	Phe	Ala	Ser	Leu	Trp	Arg	Arg	Thr	Leu	Tyr	Phe	Ala	Tyr	
305					310					315					320
Phe	Cys	Cys	Val	Leu	Leu	Gly	Ser	Ile	Thr	Ala	Phe	Leu	Val	Ala	Lys
				325					330					335	
Arg	Leu	Ser	Lys	Pro	Ile	Arg	Lys	Leu	Ala	Thr	Ala	Met	Met	Glu	Thr
			340					345					350		
Arg	Arg	Asn	Gln	His	His	Pro	Tyr	Glu	Pro	Asp	Ser	Leu	Gly	Phe	Glu
			355				360					365			
Ile	Asn	His	Leu	Gly	Glu	Ile	Phe	Asn	Ser	Met	Val	Gln	Ser	Leu	Leu
	370					375					380				
Gln	Gln	Gln	Ser	Leu	Ala	Glu	Lys	Asn	Phe	Glu	Ile	Lys	Gln	His	Ala
385					390					395					400
Gln	Asn	Ala	Leu	Arg	Leu	Gly	Glu	Glu	Ala	Gln	Gln	Cys	Leu	Leu	Pro
				405					410					415	

Asn Gln Leu Pro Asp Ser Pro Thr Thr Glu Ile Ala Lys Ala Tyr Ile
 420 425 430
 Pro Ala Ile Thr Val Gly Gly Asp Phe Phe Asp Ile Phe Val Ile Gly
 435 440 445
 Glu Gly Pro Gln Ala Lys Leu Phe Leu Ile Val Ala Asp Ala Ser Gly
 450 455 460
 Lys Gly Val Asn Ala Cys Ala Tyr Ser Leu Phe Leu Lys Asn Met Leu
 465 470 475 480
 His Thr Phe Leu Ser Glu Leu Ser Ser Ile Gln Glu Ala Val Gln Gln
 485 490 495
 Thr Ala Ala Leu Phe Tyr Gln Gln Thr Ala Glu Ser Gly Met Phe Val
 500 505 510
 Thr Leu Cys Ile Tyr Cys Tyr His Tyr Ala Thr Arg Glu Leu Glu Tyr
 515 520 525
 Tyr Ser Cys Gly His Asn Pro Ala Cys Leu Arg Ala Pro Asn Gly Asp
 530 535 540
 Ile Ser Phe Leu Ser His Pro Gly Met Ala Leu Gly Phe Leu Pro Glu
 545 550 555 560
 Val Pro Pro His Pro Ala Tyr Thr Leu Val Leu Glu Glu Glu Ser Leu
 565 570 575
 Leu Val Leu Tyr Thr Asp Gly Val Thr Glu Ala Ser Asn Lys His Gly
 580 585 590
 Glu Met Phe Gly Glu Glu Arg Leu Lys Ala Leu Val Ala Ser Leu Thr
 595 600 605
 Lys Gln Ser Ala Glu Glu Ala Ile Gln Ser Ile Met Phe Ser Ile Lys
 610 615 620
 Ser Phe Val Lys Asp Cys Pro Gln His Asp Asp Ile Thr Leu Leu Val
 625 630 635 640
 Leu Lys Ile Pro Lys Glu Pro Ser Ala Tyr
 645 650

<210> 591

<211> 313

<212> PRT

<213> C. Trachomatis D serovar

<400> 591

Met Leu Ser Tyr Ile Lys Arg Arg Leu Leu Phe Asn Leu Leu Ser Leu
 1 5 10 15
 Trp Val Val Val Thr Leu Thr Phe Phe Ile Ile Lys Thr Ile Pro Gly
 20 25 30
 Asp Pro Phe Asn Asp Glu Asn Gly Asn Ile Leu Ser Ser Glu Thr Leu
 35 40 45
 Ala Leu Leu Lys Asn Arg Tyr Gly Leu Asp Lys Pro Leu Phe Thr Gln
 50 55 60
 Tyr Leu Ile Tyr Leu Lys Cys Leu Leu Thr Leu Asp Phe Gly Glu Ser
 65 70 75 80
 Leu Ile Tyr Lys Asp Arg Thr Val Ile Ser Ile Ile Ala Ala Ala Leu
 85 90 95
 Pro Ser Ser Ala Ile Leu Gly Leu Glu Ser Leu Cys Leu Ser Leu Phe
 100 105 110
 Gly Gly Ile Thr Leu Gly Ile Leu Ala Ala Phe Tyr Lys Lys Ser Cys
 115 120 125
 Gly Arg Thr Ile Phe Phe Ser Ser Val Ile Gln Ile Ser Val Pro Ala
 130 135 140
 Phe Val Ile Gly Ala Phe Leu Gln Tyr Val Phe Ala Ile Lys Tyr Ser
 145 150 155 160

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<210> 592
<211> 1237
<212> PRT
<213> C. Trachomatis D serovar
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<400>	> 592														
Met	Thr	Trp	Ile	Pro	Leu	His	Cys	His	Ser	Gln	Tyr	Ser	Ile	Leu	Asp
1				5					10					15	
Ala	Thr	Cys	Ser	Ile	Lys	Lys	Phe	Val	Ala	Lys	Ala	Val	Glu	Tyr	Gln
			20				25						30		
Ile	Pro	Ala	Leu	Ala	Leu	Thr	Asp	His	Gly	Asn	Leu	Phe	Gly	Ala	Val
		35					40					45			
Glu	Phe	Tyr	Lys	Thr	Cys	Lys	Gln	Asn	Ala	Ile	Lys	Pro	Ile	Ile	Gly
	50					55					60				
Cys	Glu	Leu	Tyr	Val	Ala	Pro	Ser	Ser	Arg	Phe	Asp	Lys	Lys	Lys	Glu
65					70					75					80
Arg	Lys	Ser	Arg	Val	Ala	Asn	His	Leu	Ile	Leu	Leu	Cys	Lys	Asp	Glu
				85					90					95	
Glu	Gly	Tyr	Arg	Asn	Leu	Cys	Leu	Leu	Ser	Ser	Leu	Ala	Tyr	Thr	Glu
			100					105						110	
Gly	Phe	Tyr	Tyr	Val	Pro	Arg	Ile	Asp	Arg	Asp	Leu	Leu	Ser	Gln	His
		115					120					125			
Ser	Lys	Gly	Leu	Ile	Cys	Leu	Ser	Ala	Cys	Leu	Ser	Gly	Ser	Val	Ala
	130					135						140			
Gln	Ala	Ala	Leu	Glu	Ser	Glu	Glu	Asp	Leu	Glu	Lys	Asp	Leu	Leu	Trp
145					150					155					160
Tyr	Gln	Asp	Leu	Phe	Gln	Glu	Asp	Phe	Phe	Ser	Glu	Val	Gln	Leu	His
				165					170					175	
Lys	Ser	Ser	Glu	Glu	Lys	Val	Ala	Leu	Phe	Glu	Glu	Thr	Trp	Leu	Lys
			180					185					190		
Gln	Asn	Tyr	Tyr	Gln	Phe	Ile	Glu	Lys	Gln	Leu	Lys	Val	Asn	Glu	Ala
		195					200					205			
Val	Leu	Ala	Thr	Ser	Lys	Arg	Leu	Gly	Ile	Pro	Ser	Val	Ala	Thr	Asn
	210					215					220				
Asp	Ile	His	Tyr	Leu	Asn	Pro	Asp	Asp	Trp	Leu	Ala	His	Glu	Ile	Leu
225					230					235					240

Leu	Asn	Val	Gln	Ser	Arg	Glu	Pro	Ile	Arg	Thr	Ala	Lys	Gln	Asn	Thr
				245					250					255	
Tyr	Ile	Pro	Asn	Pro	Lys	Arg	Lys	Thr	Tyr	Pro	Ser	Arg	Glu	Phe	Tyr
			260					265					270		
Phe	Lys	Ser	Pro	Gln	Glu	Ile	Ala	Glu	Leu	Phe	Ala	Ala	His	Pro	Glu
		275					280				285				
Thr	Ile	Thr	Asn	Thr	Cys	Ile	Val	Ala	Glu	Arg	Cys	His	Leu	Glu	Leu
	290				295					300					
Asp	Phe	Glu	Thr	Lys	His	Tyr	Pro	Ile	Tyr	Val	Pro	Glu	Ala	Leu	Gln
305				310						315					320
Lys	Lys	Gly	Ser	Tyr	Thr	Glu	Glu	Glu	Arg	Tyr	Lys	Ala	Ser	Ser	Ala
			325						330				335		
Phe	Leu	Glu	Glu	Leu	Cys	Glu	Gln	Gly	Leu	Thr	Ser	Lys	Tyr	Thr	Pro
			340					345					350		
Glu	Leu	Leu	Gly	His	Ile	Ala	Lys	Lys	Phe	Pro	Gly	Glu	Asp	Pro	Leu
		355					360					365			
Thr	Leu	Val	Lys	Glu	Arg	Leu	Lys	Leu	Glu	Ser	Ser	Ile	Ile	Ile	Ser
	370					375				380					
Lys	Gly	Met	Cys	Asp	Tyr	Leu	Leu	Ile	Val	Trp	Asp	Ile	Ile	Asn	Trp
385				390					395					400	
Ala	Lys	Asp	His	Gly	Ile	Pro	Val	Gly	Pro	Gly	Arg	Gly	Ser	Gly	Ala
			405					410					415		
Gly	Ser	Val	Met	Leu	Phe	Leu	Leu	Gly	Ile	Thr	Glu	Ile	Glu	Pro	Ile
			420					425					430		
Arg	Phe	Asp	Leu	Phe	Phe	Glu	Arg	Phe	Ile	Asn	Pro	Glu	Arg	Ile	Ser
		435				440				445					
Tyr	Pro	Asp	Ile	Asp	Ile	Asp	Ile	Cys	Met	Ile	Gly	Arg	Glu	Arg	Val
	450			455						460					
Ile	Asn	Tyr	Ala	Ile	Glu	Arg	His	Gly	Lys	Asp	Asn	Val	Ala	Gln	Ile
465				470					475					480	
Ile	Thr	Phe	Gly	Thr	Met	Lys	Ala	Lys	Met	Ala	Ile	Lys	Asp	Val	Gly
			485					490					495		
Arg	Thr	Leu	Asp	Thr	Pro	Leu	Ala	Lys	Val	Asn	Phe	Ile	Ala	Lys	His
			500					505					510		
Ile	Pro	Asp	Leu	Asn	Ala	Thr	Ile	Thr	Ser	Ala	Leu	Glu	Ala	Asp	Pro
		515				520						525			
Glu	Leu	Arg	Gln	Leu	Tyr	Val	Asp	Asp	Ala	Glu	Ala	Ala	Glu	Val	Ile
	530					535				540					
Asp	Met	Ala	Lys	Lys	Leu	Glu	Gly	Ser	Ile	Arg	Asn	Thr	Gly	Val	His
545				550					555						560
Ala	Ala	Gly	Val	Ile	Ile	Cys	Gly	Asp	Pro	Leu	Thr	Asn	His	Ile	Pro
			565					570					575		
Ile	Cys	Val	Pro	Lys	Asp	Ser	Ser	Met	Ile	Ser	Thr	Gln	Tyr	Ser	Met
			580					585					590		
Lys	Pro	Val	Glu	Ser											

	690					695					700				
Glu Tyr Asp His Pro Leu Met Glu Pro Ile Leu Lys Glu Thr Phe Gly															
705					710				715						720
Ile Met Val Tyr Gln Glu Gln Val Met Gln Ile Ala Gly Ser Leu Ala															
				725				730							735
Lys Tyr Ser Leu Gly Glu Gly Asp Val Leu Arg Arg Ala Met Gly Lys								745							
				740										750	
Lys Asp His Glu Gln Met Val Lys Glu Arg Glu Lys Phe Cys Ser Arg								760							
				755				775							
Ala Ala Ala Asn Gly Ile Asp Pro Ser Ile Ala Thr Thr Ile Phe Asp															
				770				780							
Lys Met Glu Lys Phe Ala Ser Tyr Gly Phe Asn Lys Ser His Ala Ala															
785					790				795						800
Ala Tyr Gly Leu Ile Thr Tyr Thr Thr Ala Tyr Leu Lys Ala Asn Tyr															
				805					810						815
Pro Lys Glu Trp Leu Ala Ala Leu Leu Thr Cys Asp Tyr Asp Asp Ile															
				820				825							
Glu Lys Val Gly Lys Leu Ile Gln Glu Ala His Ser Met Asn Ile Leu															
				835				840							
Val Leu Pro Pro Asp Ile Asn Glu Ser Gly Gln Asp Phe Glu Ala Thr															
				850				855							
Gln Lys Gly Ile Arg Phe Ser Leu Gly Ala Val Lys Gly Val Gly Met															
865					870				875						880
Ser Ile Val Asp Ser Ile Val Glu Glu Arg Glu Lys Asn Gly Pro Tyr															
				885					890						895
Lys Ser Leu Gln Asp Phe Val Gln Arg Ala Asp Phe Lys Lys Val Thr															
				900				905							
Lys Lys Gln Leu Glu Asn Leu Val Asp Ala Gly Thr Phe Asp Cys Phe															
				915				920							
Glu Pro Asn Lys Asp Leu Ala Leu Ala Ile Leu Asn Asp Leu Tyr Asp															
				930				935							
Thr Phe Ser Arg Glu Lys Lys Glu Ala Ala Thr Gly Val Leu Thr Phe															
945					950				955						960
Phe Ser Leu Asp Ser Met Ala Arg Asp Pro Val Lys Ile Thr Val Ser															
				965					970						975
Pro Glu Asn Val Ile Gln Arg Ser Pro Lys Glu Leu Leu Lys Arg Glu															
				980				985							
Lys Glu Leu Leu Gly Val Tyr Leu Thr Ala His Pro Met Asp Ala Val															
				995				1000							
Glu His Met Leu Pro Phe Leu Ser Val Val Pro Ala Arg Asp Phe Glu															
				1010				1015							
Gly Leu Pro His Gly Thr Ile Ile Arg Thr Val Phe Leu Ile Asp Lys															
1025					1030				1035						1040
Val Thr Thr Lys Ile Ser Ser Ala Glu Gln Lys Lys Phe Ala Leu Leu															
				1045					1050						1055
Gln Val Ser Asp Glu Val Asp Ser Tyr Glu Leu Pro Ile Trp Ala Asp															
				1060				1065							
Met Tyr Ala Glu Tyr Arg Asp Leu Leu Glu Glu Asp Arg Leu Ile Tyr															
				1075				1080							


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<210> 593
<211> 563
<212> PRT
<213> C. Trachomatis D serovar
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<400>	593														
Met	Val	Tyr	Phe	Arg	Ala	His	Gln	Pro	Arg	His	Thr	Pro	Lys	Thr	Phe
1				5					10					15	
Pro	Leu	Glu	Val	His	His	Ser	Phe	Ser	Asp	Lys	His	Pro	Gln	Ile	Ala
			20					25					30		
Lys	Ala	Met	Arg	Ile	Thr	Gly	Ile	Ala	Leu	Ala	Ala	Leu	Ser	Leu	Leu
		35					40					45			
Ala	Val	Val	Ala	Cys	Val	Ile	Ala	Val	Ser	Ala	Gly	Gly	Ala	Ala	Ile
	50					55					60				
Pro	Leu	Ala	Val	Ile	Ser	Gly	Ile	Ala	Val	Met	Ser	Gly	Leu	Leu	Ser
65					70					75					80
Ala	Ala	Thr	Ile	Ile	Cys	Ser	Ala	Lys	Lys	Ala	Leu	Ala	Gln	Arg	Lys
				85					90					95	
Gln	Lys	Gln	Leu	Glu	Glu	Ser	Leu	Pro	Leu	Asp	Asn	Ala	Thr	Glu	His
			100					105					110		
Val	Ser	Tyr	Leu	Thr	Ser	Asp	Thr	Ser	Tyr	Phe	Asn	Gln	Trp	Glu	Ser
		115					120					125			
Leu	Gly	Ala	Leu	Asn	Lys	Gln	Leu	Ser	Gln	Ile	Asp	Leu	Thr	Ile	Gln
	130					135					140				
Ala	Pro	Glu	Lys	Lys	Leu	Leu	Lys	Glu	Val	Leu	Gly	Ser	Arg	Tyr	Asp
145					150					155					160
Ser	Ile	Asn	His	Ser	Ile	Glu	Glu	Ile	Ser	Asp	Arg	Phe	Thr	Lys	Met
				165					170					175	
Leu	Ser	Leu	Leu	Arg	Leu	Arg	Glu	His	Phe	Tyr	Arg	Gly	Glu	Glu	Arg
			180					185					190		
Tyr	Ala	Pro	Tyr	Leu	Ser	Pro	Pro	Leu	Leu	Asn	Lys	Asn	Arg	Leu	Leu
		195					200					205			
Thr	Gln	Ile	Thr	Ser	Asn	Met	Ile	Arg	Met	Leu	Pro	Lys	Ser	Gly	Gly
	210					215					220				
Val	Phe	Ser	Leu	Lys	Ala	Asn	Thr	Leu	Ser	His	Ala	Ser	Arg	Thr	Leu
225					230					235					240
Tyr	Thr	Val	Leu	Lys	Val	Ala	Leu	Ser	Leu	Gly	Val	Leu	Ala	Gly	Val
				245					250					255	
Ala	Ala	Leu	Ile	Ile	Phe	Leu	Pro	Pro	Ser	Leu	Pro	Phe	Ile	Ala	Val
			260					265					270		
Ile	Gly	Val	Ser	Ser	Leu	Ala	Leu	Gly	Met	Ala	Ser	Phe	Leu	Met	Ile
		275					280					285			
Arg	Gly	Ile	Lys	Tyr	Leu	Leu	Glu	His	Ser	Pro	Leu	Asn	Arg	Lys	Gln
	290					295					300				

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<210> 594
<211> 1751
<212> PRT
<213> C. Trachomatis D serovar
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Met	Lys	Trp	Leu	Ser	Ala	Thr	Ala	Val	Phe	Ala	Ala	Val	Leu	Pro	Ser
1				5					10					15	
Val	Ser	Gly	Phe	Cys	Phe	Pro	Glu	Pro	Lys	Glu	Leu	Asn	Phe	Ser	Arg
			20					25					30		
Val	Gly	Thr	Ser	Ser	Ser	Thr	Thr	Phe	Thr	Glu	Thr	Val	Gly	Glu	Ala
		35				40						45			
Gly	Ala	Glu	Tyr	Ile	Val	Ser	Gly	Asn	Ala	Ser	Phe	Thr	Lys	Phe	Thr
	50					55					60				
Asn	Ile	Pro	Thr	Thr	Asp	Thr	Thr	Thr	Pro	Thr	Asn	Ser	Asn	Ser	Ser
65					70					75				80	
Ser	Ser	Asn	Gly	Glu	Thr	Ala	Ser	Val	Ser	Glu	Asp	Ser	Asp	Ser	Thr
			85						90					95	
Thr	Thr	Thr	Pro	Asp	Pro	Lys	Gly	Gly	Gly	Ala	Phe	Tyr	Asn	Ala	His
			100					105					110		
Ser	Gly	Val	Leu	Ser	Phe	Met	Thr	Arg	Ser	Gly	Thr	Glu	Gly	Ser	Leu
		115					120					125			

Thr	Leu	Ser	Glu	Ile	Lys	Ile	Thr	Gly	Glu	Gly	Gly	Ala	Ile	Phe	Ser
	130					135					140				
Gln	Gly	Glu	Leu	Leu	Phe	Thr	Asp	Leu	Thr	Gly	Leu	Thr	Ile	Gln	Asn
145					150					155					160
Asn	Leu	Ser	Gln	Leu	Ser	Gly	Gly	Ala	Ile	Phe	Gly	Glu	Ser	Thr	Ile
				165					170					175	
Ser	Leu	Ser	Gly	Ile	Thr	Lys	Ala	Thr	Phe	Ser	Ser	Asn	Ser	Ala	Glu
			180					185					190		
Val	Pro	Ala	Pro	Val	Lys	Lys	Pro	Thr	Glu	Pro	Lys	Ala	Gln	Thr	Ala
		195					200					205			
Ser	Glu	Thr	Ser	Gly	Ser	Ser	Ser	Ser	Ser	Gly	Asn	Asp	Ser	Val	Ser
	210					215					220				
Ser	Pro	Ser	Ser	Ser	Arg	Ala	Glu	Pro	Ala	Ala	Ala	Asn	Leu	Gln	Ser
225					230					235					240
His	Phe	Ile	Cys	Ala	Thr	Ala	Thr	Pro	Ala	Ala	Gln	Thr	Asp	Thr	Glu
				245					250					255	
Thr	Ser	Thr	Pro	Ser	His	Lys	Pro	Gly	Ser	Gly	Gly	Ala	Ile	Tyr	Ala
			260					265					270		
Lys	Gly	Asp	Leu	Thr	Ile	Ala	Asp	Ser	Gln	Glu	Val	Leu	Phe	Ser	Ile
		275					280					285			
Asn	Lys	Ala	Thr	Lys	Asp	Gly	Gly	Ala	Ile	Phe	Ala	Glu	Lys	Asp	Val
	290					295					300				
Ser	Phe	Glu	Asn	Ile	Thr	Ser	Leu	Lys	Val	Gln	Thr	Asn	Gly	Ala	Glu
305					310					315					320
Glu	Lys	Gly	Gly	Ala	Ile	Tyr	Ala	Lys	Gly	Asp	Leu	Ser	Ile	Gln	Ser
				325					330					335	
Ser	Lys	Gln	Ser	Leu	Phe	Asn	Ser	Asn	Tyr	Ser	Lys	Gln	Gly	Gly	Gly
			340					345					350		
Ala	Leu	Tyr	Val	Glu	Gly	Asp	Ile	Asn	Phe	Gln	Asp	Leu	Glu	Glu	Ile
		355					360					365			
Arg	Ile	Lys	Tyr	Asn	Lys	Ala	Gly	Thr	Phe	Glu	Thr	Lys	Lys	Ile	Thr
	370					375					380				
Leu	Pro	Lys	Ala	Gln	Ala	Ser	Ala	Gly	Asn	Ala	Asp	Ala	Trp	Ala	Ser
385					390					395					400
Ser	Ser	Pro	Gln	Ser	Gly	Ser	Gly	Ala	Thr	Thr	Val	Ser	Asn	Ser	Gly
				405					410					415	
Asp	Ser	Ser	Ser	Gly	Ser	Asp	Ser	Asp	Thr	Ser	Glu	Thr	Val	Pro	Ala
			420					425					430		
Thr	Ala	Lys	Gly	Gly	Gly	Leu	Tyr	Thr	Asp	Lys	Asn	Leu	Ser	Ile	Thr
		435					440					445			
Asn	Ile	Thr	Gly	Ile	Ile	Glu	Ile	Ala	Asn	Asn	Lys	Ala	Thr	Asp	Val
	450					455					460				
Gly	Gly	Gly	Ala	Tyr	Val	Lys	Gly	Thr	Leu	Thr	Cys	Glu	Asn	Ser	His
465					470					475					480
Arg	Leu	Gln													

			580						585						590					
Gly	Asn	Gly	Gly	Gly	Val	Cys	Thr	Lys	Arg	Leu	Ala	Leu	Ser	Asn	Leu					
		595					600					605								
Gln	Ser	Ile	Ser	Ile	Ser	Gly	Asn	Ser	Ala	Ala	Glu	Asn	Gly	Gly	Gly					
	610					615					620									
Ala	His	Thr	Cys	Pro	Asp	Ser	Phe	Pro	Thr	Ala	Asp	Thr	Ala	Glu	Gln					
625					630					635					640					
Pro	Ala	Ala	Ala	Ser	Ala	Ala	Thr	Ser	Thr	Pro	Glu	Ser	Ala	Pro	Val					
				645					650					655						
Val	Ser	Thr	Ala	Leu	Ser	Thr	Pro	Ser	Ser	Ser	Thr	Val	Ser	Ser	Leu					
			660					665					670							
Thr	Leu	Leu	Ala	Ala	Ser	Ser	Gln	Ala	Ser	Pro	Ala	Thr	Ser	Asn	Lys					
		675					680					685								
Glu	Thr	Gln	Asp	Pro	Asn	Ala	Asp	Thr	Asp	Leu	Leu	Ile	Asp	Tyr	Val					
	690					695					700									
Val	Asp	Thr	Thr	Ile	Ser	Lys	Asn	Thr	Ala	Lys	Lys	Gly	Gly	Gly	Ile					
705					710					715					720					
Tyr	Ala	Lys	Lys	Ala	Lys	Met	Ser	Arg	Ile	Asp	Gln	Leu	Asn	Ile	Ser					
				725				730						735						
Glu	Asn	Ser	Ala	Thr	Glu	Ile	Gly	Gly	Gly	Ile	Cys	Cys	Lys	Glu	Ser					
			740					745					750							
Leu	Glu	Leu	Asp	Ala	Leu	Val	Ser	Leu	Ser	Val	Thr	Glu	Asn	Leu	Val					
		755					760					765								
Gly	Lys	Glu	Gly	Gly	Gly	Leu	His	Ala	Lys	Thr	Val	Asn	Ile	Ser	Asn					
	770					775					780									
Leu	Lys	Ser	Gly	Phe	Ser	Phe	Ser	Asn	Asn	Lys	Ala	Asn	Ser	Ser	Ser					
785					790					795					800					
Thr	Gly	Val	Ala	Thr	Thr	Ala	Ser	Ala	Pro	Ala	Ala	Ala	Ala	Ala	Ser					
				805					810					815						
Leu	Gln	Ala	Ala	Ala	Ala	Ala	Val	Pro	Ser	Ser	Pro	Ala	Thr	Pro	Thr					
			820					825					830							
Tyr	Ser	Gly	Val	Val	Gly	Gly	Ala	Ile	Tyr	Gly	Glu	Lys	Val	Thr	Phe					
		835					840					845								
Ser	Gln	Cys	Ser	Gly	Thr	Cys	Gln	Phe	Ser	Gly	Asn	Gln	Ala	Ile	Asp					
	850					855					860									
Asn	Asn	Pro	Ser	Gln	Ser	Ser	Leu	Asn	Val	Gln	Gly	Gly	Ala	Ile	Tyr					
865					870					875					880					
Ala	Lys	Thr	Ser	Leu	Ser	Ile	Gly	Ser	Ser	Asp	Ala	Gly	Thr	Ser	Tyr					
				885					890					895						
Ile	Phe	Ser	Gly	Asn	Ser	Val	Ser	Thr	Gly	Lys	Ser	Gln	Thr	Thr	Gly					
			900					905					910							
Gln	Ile	Ala	Gly	Gly	Ala	Ile	Tyr	Ser	Pro	Thr	Val	Thr	Leu	Asn	Cys					
		915					920					925								
Pro	Ala	Thr	Phe	Ser	Asn	Asn	Thr	Ala	Ser	Met	Ala	Thr	Pro	Lys	Thr					
	930					935														

Asn Ile Thr Phe Asn Gln Asn Thr Ser Thr His Asp Gly Ser Ala Ile
 1045 1050 1055
 Tyr Phe Thr Lys Asp Ala Thr Ile Glu Ser Leu Gly Ser Val Leu Phe
 1060 1065 1070
 Thr Gly Asn Asn Val Thr Ala Thr Gln Ala Ser Ser Ala Thr Ser Gly
 1075 1080 1085
 Gln Asn Thr Asn Thr Ala Asn Tyr Gly Ala Ala Ile Phe Gly Asp Pro
 1090 1095 1100
 Gly Thr Thr Gln Ser Ser Gln Thr Asp Ala Ile Leu Thr Leu Leu Ala
 1105 1110 1115 1120
 Ser Ser Gly Asn Ile Thr Phe Ser Asn Asn Ser Leu Gln Asn Asn Gln
 1125 1130 1135
 Gly Asp Thr Pro Ala Ser Lys Phe Cys Ser Ile Ala Gly Tyr Val Lys
 1140 1145 1150
 Leu Ser Leu Gln Ala Ala Lys Gly Lys Thr Ile Ser Phe Phe Asp Cys
 1155 1160 1165
 Val His Thr Ser Thr Lys Lys Ile Gly Ser Thr Gln Asn Val Tyr Glu
 1170 1175 1180
 Thr Leu Asp Ile Asn Lys Glu Glu Asn Ser Asn Pro Tyr Thr Gly Thr
 1185 1190 1195 1200
 Ile Val Phe Ser Ser Glu Leu His Glu Asn Lys Ser Tyr Ile Pro Gln
 1205 1210 1215
 Asn Ala Ile Leu His Asn Gly Thr Leu Val Leu Lys Glu Lys Thr Glu
 1220 1225 1230
 Leu His Val Val Ser Phe Glu Gln Lys Glu Gly Ser Lys Leu Ile Met
 1235 1240 1245
 Lys Pro Gly Ala Val Leu Ser Asn Gln Asn Ile Ala Asn Gly Ala Leu
 1250 1255 1260
 Val Ile Asn Gly Leu Thr Ile Asp Leu Ser Ser Met Gly Thr Pro Gln
 1265 1270 1275 1280
 Ala Gly Glu Ile Phe Ser Pro Pro Glu Leu Arg Ile Val Ala Thr Thr
 1285 1290 1295
 Ser Ser Ala Ser Gly Gly Ser Gly Val Ser Ser Ser Ile Pro Thr Asn
 1300 1305 1310
 Pro Lys Arg Ile Ser Ala Ala Ala Pro Ser Gly Ser Ala Ala Thr Thr
 1315 1320 1325
 Pro Thr Met Ser Glu Asn Lys Val Phe Leu Thr Gly Asp Leu Thr Leu
 1330 1335 1340
 Ile Asp Pro Asn Gly Asn Phe Tyr Gln Asn Pro Met Leu Gly Ser Asp
 1345 1350 1355 1360
 Leu Asp Val Pro Leu Ile Lys Leu Pro Thr Asn Thr Ser Asp Val Gln
 1365 1370 1375
 Val Tyr Asp Leu Thr Leu Ser Gly Asp Leu Phe Pro Gln Lys Gly Tyr
 1380 1385 1390
 Met Gly Thr Trp Thr Leu Asp Ser Asn Pro Gln Thr Gly Lys Leu Gln
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Phe Ser Gln Ser Trp Glu Leu Gly Lys Phe Asn Glu Ser Arg Lys Leu
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Ser Asn Gly Thr Leu Leu Glu Ile Ala Lys Ile Tyr Pro Met Asp Ala
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Tyr 145	Leu	Ala	Ala	Leu	Ser 150	Ala	Ser	Ser	Tyr	Ser 155	Phe	Val	Ser	Leu	Leu 160
Ser	His	Phe	Gly 165	Ser	Ile	Met	Asn	Arg	Gly 170	Gly	Ser	Thr	Ile	Ser 175	Leu
Thr	Tyr	Leu	Ala 180	Ser	Met	Arg	Ala	Val 185	Pro	Gly	Tyr	Gly	Gly 190	Gly	Met
Ser	Ser	Ala 195	Lys	Ala	Ala	Leu	Glu 200	Ser	Asp	Thr	Lys	Thr 205	Leu	Ala	Trp
Glu 210	Ala	Gly	Arg	Arg	Trp	Gly 215	Ile	Arg	Val	Asn	Thr 220	Ile	Ser	Ala	Gly
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Val	Asp	Tyr	Tyr	Gln 245	Glu	Trp	Ala	Pro	Ile 250	Pro	Glu	Ala	Met	Asn 255	Ala
Glu	Gln	Val	Gly 260	Ala	Val	Ala	Ala	Phe 265	Leu	Ala	Ser	Pro	Leu 270	Ala	Ser
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 Val Glu Val Tyr Leu Asp Gln Ala Glu Asp Glu Glu Gly Lys Val Val
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 Ala His Cys Glu Glu Gly Ser Ile Val Lys Gly Gln Ile Thr Arg Lys
 130 135 140
 Val Lys Gly Gly Leu Ile Val Asp Ile Gly Met Glu Ala Phe Leu Pro
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 Asn Ile Val Val Ser Arg Arg Glu Leu Leu Glu Ala Glu Arg Ile Ser
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 Gln Lys Glu His Asn Pro Trp Glu Asp Ile Glu Lys Lys Tyr Pro Pro
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 Asp Val Leu Cys Asn Arg Glu Ile Lys Phe Asp Leu Leu Gln Lys Lys
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 Val Arg Glu Leu Lys Gly Asp Phe Leu Ala Thr Gly His Tyr Cys Arg
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 Gly Gly Ala Asp Gly Thr Gly Leu Ser Arg Gly Ile Asp Pro Asn Lys
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 Asp Gln Ser Tyr Phe Leu Cys Gly Thr Pro Lys Asp Ala Leu Ser Asn
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 Val Leu Phe Pro Leu Gly Gly Met Tyr Lys Thr Glu Val Arg Arg Ile
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 Ala Gln Glu Ala Gly Leu Ala Thr Ala Thr Lys Lys Asp Ser Thr Gly
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 Val Gly Arg His Glu Gly Ala His Tyr Tyr Thr Ile Gly Gln Arg Arg
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 Gly Leu Asn Ile Gly Gly Met Glu Lys Pro Cys Tyr Val Leu Ser Lys
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